Snohomish County Standard Consultant Agreement

☒ Architectural/Engineering Agreement
☐ Personal Services Agreement

Agreement Number
CCF07-13

Federal Aid Number
ER-0701(063)

Agreement Type (Choose one)

☐ **Lump Sum**
Lump Sum Amount $ _____

☐ **Cost Plus Fixed Fee**
Overhead Progress Payment Rate: **0.00**%
Overhead Cost Method
☐ Actual Cost
☐ Actual Cost Not To Exceed: **0.00**%
☐ Fixed Overhead Rate: **0.00**%
Fixed Fee $ _____

☒ **Specific Rates of Pay**
☒ Negotiated Hourly Rate
☐ Provisional Hourly Rate

☐ **Cost Per Unit of Work**

Consultant/Address/Telephone
BergerABAM Inc.
3301 Ninth Avenue South, Suite 300
Federal Way, WA 98003
Contact Name / E-Mail Address
Robert L. Fernandes / bob.fernandes@abam.com
Telephone 206-357-5616 Fax 206-357-5601

Project Title And Work Description
Structural Engineering, Geotechnical Design, Survey and Mapping Services for the Index Galena Road (MP 6.4 – 6.9) Flood Repair Project

Provide Structural Engineering, Geotechnical Design, Survey and Mapping Services for the Index Galena Road (MP 6.4 – 6.9) Flood Repair Project. The Index-Galena Road is located along the Skykomish River in the Mount Baker – Snoqualmie National Forest in southeast Snohomish County. During Fall 2006 it was severely damaged by flooding and was washed out between mile posts 6.4 and 6.9.

DBE Participation
☐ Yes ☒ No _____ %

Federal Employer ID Number 91-1422812
UBI Number 601 110 595

Do you require a 1099 for IRS? ☐ Yes ☒ No
Completion Date *December 31, 2015*

Total Amount Authorized	**$1,137,640.00**
Management Reserve Fund	**$100,000.00**
Maximum Amount Payable	**$1,237,640.00**

INDEX OF EXHIBITS (Check all that apply):

☒ Exhibit A-1 Scope of Work
☐ Exhibit A-2 Task Order Agreement
☐ Exhibit B-1 DBE Utilization Certification
☒ Exhibit C Electronic Exchange of Data
☐ Exhibit D-1 Payment - Lump Sum
☐ Exhibit D-2 Payment - Cost Plus
☒ Exhibit D-3 Payment - Hourly Rate
☐ Exhibit D-4 Payment - Provisional
☒ Exhibit E-1 Fee - Budget
☒ Exhibit E-2 Fee - Specific Rates
☒ Exhibit F Overhead Cost
☒ Exhibit G Subcontracted Work
☒ Exhibit G-1 Subconsultant Fee
☒ Exhibit G-2 Fee – Sub Specific Rates
☒ Exhibit G-3 Sub Overhead Cost
☒ Exhibit H Title VI Assurances
☒ Exhibit I Payment Upon Termination of Agreement
☒ Exhibit J Alleged Consultant Design Error Procedures
☒ Exhibit K Consultant Claim Procedures
☐ Exhibit L Liability Insurance Increase
☒ Exhibit M-1a Consultant Certification
☒ Exhibit M-1b Agency Official Certification
☒ Exhibit M-2 Certification - Primary
☒ Exhibit M-3 Lobbying Certification
☒ Exhibit M-4 Pricing Data Certification
☒ Exhibit N Examples

THIS AGREEMENT, made and entered into this 8TH day of AUGUST, 2013, between, Snohomish County, a political subdivision of the State of Washington hereinafter called the "COUNTY", and the above organization hereinafter called the "CONSULTANT".

WITNESSETH THAT:

WHEREAS, the COUNTY desires to accomplish the above referenced project, and

WHEREAS, the COUNTY does not have sufficient staff to meet the required commitment and therefore deems it advisable and desirable to engage the assistance of a CONSULTANT to provide the necessary services for the PROJECT; and

WHEREAS, the CONSULTANT represents that he/she is in compliance with the Washington State Statutes relating to professional registration, if applicable, and has signified a willingness to furnish consulting services to the COUNTY,

NOW THEREFORE, in consideration of the terms, conditions, covenants, and performance contained herein, or attached and incorporated and made a part hereof, the parties hereto agree as follows:

I General Description of Work

The work under this AGREEMENT shall consist of the above described work and services as herein defined and necessary to accomplish the completed work for this PROJECT. The CONSULTANT shall furnish all services, labor, and related equipment necessary to conduct and complete the work as designated elsewhere in this AGREEMENT.

II Scope of Work

The Scope of Work and projected level of effort required for this PROJECT is detailed in Exhibit "A" attached hereto and by this reference made a part of this AGREEMENT.

III General Requirements

All aspects of coordination of the work of this AGREEMENT with outside agencies, groups, or individuals shall receive advance approval by the COUNTY. Necessary contacts and meetings with agencies, groups, and/or individuals shall be coordinated through the COUNTY. The CONSULTANT shall attend coordination, progress and presentation meetings with the COUNTY and/or such Federal, State, Community, City or County officials, groups or individuals as may be required by the COUNTY. The COUNTY shall provide the CONSULTANT sufficient notice prior to meetings requiring CONSULTANT participation. The minimum required hours or days notice shall be agreed to between the COUNTY and the CONSULTANT and shown in Exhibit "A".

The CONSULTANT shall prepare a monthly progress report, in a form approved by the COUNTY, which will outline in written and graphical form the various phases and the order of performance of the work in sufficient detail so that the progress of the work can easily be evaluated.

The CONSULTANT, and each SUBCONSULTANT, shall not discriminate on the basis of race, color, national origin, or sex in the performance of this AGREEMENT. The CONSULTANT, and each SUBCONSULTANT, shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the CONSULTANT to carry out these requirements is a material breach of this AGREEMENT that may result in the termination of this AGREEMENT.

Participation for Disadvantaged Business Enterprises (DBE), if required, per 49 CFR Part 26, or participation of Minority Business Enterprises (MBE), and Women Business Enterprises (WBE), if required, shall be shown on the heading of this AGREEMENT. If D/M/WBE firms are utilized, the amounts authorized to each firm and their certification number will be shown on Exhibit "B" attached hereto and by reference made a part of this AGREEMENT. If the Prime CONSULTANT is a DBE firm it must comply with the Commercial Useful Function (CUF) regulation outlined in the COUNTY'S "DBE Program Participation Plan." The mandatory DBE participation goals of the AGREEMENT are those established by the WSDOT's Highway and Local Programs Project Development Engineer in consultation with the COUNTY.

All reports, PS&E materials, and other data furnished to the CONSULTANT by the COUNTY shall be returned. All electronic files, prepared by the CONSULTANT, must meet the requirements as outlined in Exhibit "C".

All designs, drawings, specifications, documents, and other work products, including all electronic files, prepared by the CONSULTANT prior to completion or termination of this AGREEMENT are instruments of service for this

PROJECT, and are the property of the COUNTY. Reuse by the COUNTY or by others, acting through or on behalf of the COUNTY of any such instruments of service, not occurring as a part of this PROJECT, shall be without liability or legal exposure to the CONSULTANT.

IV Time for Beginning and Completion

The CONSULTANT shall not begin any work under the terms of this AGREEMENT until authorized in writing by the COUNTY.

All work under this AGREEMENT shall be completed by the date shown in the heading of this AGREEMENT under completion date.

The established completion time shall not be extended because of any delays attributable to the CONSULTANT, but may be extended by the COUNTY in the event of a delay attributable to the COUNTY, or because of unavoidable delays caused by an act of God or governmental actions or other conditions beyond the control of the CONSULTANT. A prior supplemental agreement issued by the COUNTY is required to extend the established completion time.

V Payment Provisions

The CONSULTANT shall be paid by the COUNTY for completed work and services rendered under this AGREEMENT as provided in Exhibit "D" attached hereto, and by reference made a part of this AGREEMENT. Such payment shall be full compensation for work performed or services rendered and for all labor, materials, supplies, equipment, and incidentals necessary to complete the work. The CONSULTANT shall conform to all applicable portions of 48 CFR Part 31.

A post audit may be performed on this AGREEMENT. The need for a post audit will be determined by the State Auditor, WSDOT External Audit Office and/or at the request of the COUNTY'S PROJECT Manager.

VI Sub-Contracting

The COUNTY permits sub-contracts for those items of work as shown in Exhibit "G" attached hereto, and by reference made a part of this AGREEMENT.

Compensation for this sub-consultant work shall be based on the cost factors shown on Exhibit "G".

The work of the sub-consultant shall not exceed its maximum amount payable unless a prior written approval has been issued by the COUNTY.

All reimbursable direct labor, overhead, direct non-salary costs and fixed fee costs for the sub-consultant shall be substantiated in the same manner as outlined in Section V. All sub-contracts shall contain all applicable provisions of this AGREEMENT.

With respect to sub-consultant payment, the CONSULTANT shall comply with all applicable sections of the Prompt Payment laws as set forth in RCW 39.04.250 and RCW 39.76.011.

The CONSULTANT shall not sub-contract for the performance of any work under this AGREEMENT without prior written permission of the COUNTY. No permission for sub-contracting shall create, between the COUNTY and sub-contractor, any contract or any other relationship. A DBE certified sub-consultant is required to perform a minimum amount of their sub-contracted agreement that is established by the WSDOT Highway and Local Programs Project Development Engineer in consultation with the COUNTY.

VII Employment

The CONSULTANT warrants that CONSULTANT has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT, to solicit or secure this AGREEMENT, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of this AGREEMENT. For breach or violation of this warrant, the COUNTY shall have the right to annul this AGREEMENT without liability or, in its discretion, to deduct from the AGREEMENT price or consideration or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

Any and all employees of the CONSULTANT or other persons while engaged in the performance of any work or services required of the CONSULTANT under this AGREEMENT, shall be considered employees of the CONSULTANT only and not of the COUNTY, and any and all claims that may arise under any Workmen's Compensation Act on behalf of said employees or other persons while so engaged, and any and all claims made by a third party as a consequence of any act or omission on the part of the CONSULTANT'S employees or other persons while so engaged on any of the work or services to be rendered as provided herein, shall be the sole obligation and responsibility of the CONSULTANT.

The CONSULTANT shall not engage, on a full- or part-time basis, or any other basis, during the period of the AGREEMENT, any professional or technical personnel who are, or have been, at any time prior to or during the period of the AGREEMENT, in the employ of the United States Department of Transportation, or the State, or the COUNTY, except retired employees, without written consent of the public employer of such person.

VIII Nondiscrimination

During the performance of this AGREEMENT, the CONSULTANT, for itself, its assignees, and successors in interest agrees to comply with the following laws and regulations:

Title VI of the Civil Rights Act of 1964
(42 USC, Chapter 21, Subchapter V, Section 2000d through 2000d-4a)

Federal-Aid Highway Act of 1973
(23 USC, Chapter 3, Section 324)

Rehabilitation Act of 1973
(29 USC, Chapter 16, Subchapter V, Section 794)

Age Discrimination Act of 1975
(42 USC, Chapter 76, Section 6101, et seq.)

Civil Rights Restoration Act of 1987
(Public Law 100-259)

American with Disabilities Act of 1990
(42 USC, Chapter 126, Section 12101, et. Seq.)

49 CFR, Part 21

23 CFR, Part 200

RCW 49.60.180

In relation to Title VI of the Civil Rights Act of 1964, the CONSULTANT is bound by the provisions of Exhibit "H", attached hereto and by this reference made part of this AGREEMENT, and shall include the attached Exhibit "H" in every sub-contract, including procurement of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto.

IX Termination of Agreement

The right is reserved by the COUNTY to terminate this AGREEMENT at any time upon ten (10) days written notice to the CONSULTANT.

In the event this AGREEMENT is terminated by the COUNTY other than for default on the part of the CONSULTANT, a final payment shall be made to the CONSULTANT as shown in Exhibit "I", for the type of AGREEMENT used.

No payment shall be made for any work completed after ten (10) days following receipt by the CONSULTANT of the Notice to Terminate. If the accumulated payment made to the CONSULTANT prior to Notice of Termination exceeds the total amount that would be due when computed as set forth herein above, then no final payment shall be due and the CONSULTANT shall immediately reimburse the COUNTY for any excess paid.

If the services of the CONSULTANT are terminated by the COUNTY for default on the part of the CONSULTANT, the above formula for payment shall not apply.

In such an event, the amount to be paid shall be determined by the COUNTY with consideration given to the actual costs incurred by the CONSULTANT in performing the work to the date of termination, the amount of work originally required which was satisfactorily completed to date of termination, whether that work is in a form or a type which is usable to the COUNTY at the time of termination, the cost to the COUNTY of employing another firm to complete the work required and the time which may be required to do so, and other factors which affect the value to the COUNTY of the work performed at the time of termination.

Under no circumstances shall payment made under this subsection exceed the amount, which would have been made using the formula set forth above.

If it is determined for any reason the CONSULTANT was not in default or the CONSULTANT'S failure to perform is without the CONSULTANT's or its employee's default or negligence, the termination shall be deemed to be a termination for the convenience of the COUNTY. In such an event, the CONSULTANT will be reimbursed for actual costs in accordance with termination for other than default clauses listed previously.

In the event of death of any member, partner or officer of the CONSULTANT or any of its supervisory personnel assigned to the PROJECT, or dissolution of the partnership, termination of the corporation, or disaffiliation of the principally involved employee, the surviving members of the CONSULTANT hereby agree to complete the work under the terms of this AGREEMENT, if requested to do so by the COUNTY. This subsection shall not be a bar to renegotiation of the AGREEMENT between the surviving members of the CONSULTANT and the COUNTY, if the COUNTY so chooses.

In the event of death of any of the parties listed in the previous paragraph, should the surviving members of the CONSULTANT, with COUNTY concurrence, desire to terminate this AGREEMENT, payment shall be made as set forth in the second paragraph of this section.

Payment for any part of the work by the COUNTY shall not constitute a waiver by the COUNTY of any remedies of any type it may have against the CONSULTANT for any breach of this AGREEMENT by the CONSULTANT, or for failure of the CONSULTANT to perform work required of it by the COUNTY. Forbearance of any rights under the AGREEMENT shall not constitute waiver of entitlement to exercise those rights with respect to any future act or omission by the CONSULTANT.

X Changes in Work

The CONSULTANT shall make such changes and revisions to the completed work of this AGREEMENT as necessary to correct errors appearing therein, when required to do so by the COUNTY, without additional compensation therefore. Should the COUNTY find it desirable for its own purposes to have previously satisfactorily completed work or parts thereof changed or revised, the CONSULTANT shall make such revisions as directed by the COUNTY. This work shall be considered as Extra Work and shall be paid for as herein provided under Section XIV.

XI Disputes

Any dispute concerning questions of fact in connection with the work not disposed of by AGREEMENT between the CONSULTANT and the COUNTY shall be referred for determination to the Director of Public Works or COUNTY Engineer, whose decision in the matter shall be final and binding on the parties of this AGREEMENT; provided, however, that if an action is brought challenging the Director of Public Works or COUNTY Engineer's decision, that decision shall be subject to de novo judicial review. If the parties to this AGREEMENT mutually agree, disputes concerning alleged design errors shall be conducted under the procedures found in Exhibit "J", and disputes concerning claims shall be conducted under the procedures found in Exhibit "K".

XII Venue, Applicable Law, and Personal Jurisdiction

In the event either party deems it necessary to institute legal action or proceedings to enforce any right or obligation under this AGREEMENT, the parties hereto agree that any such action shall be initiated in the Superior Court of the State of Washington, situated in the County of Snohomish. The parties hereto agree that all questions shall be resolved by application of Washington law and that the parties to such action shall have the right of appeal from such decisions of the Superior Court in accordance with the laws of the State of Washington. The CONSULTANT hereby consents to the personal jurisdiction of the Superior Court of the State of Washington, situated in the County of Snohomish.

XIII Legal Relations

The CONSULTANT shall comply with all Federal, State, and local laws and ordinances applicable to the work to be done under this AGREEMENT. This AGREEMENT shall be interpreted and construed in accordance with the laws of the State of Washington.

The CONSULTANT shall indemnify and hold the COUNTY and the State and its officers and employees harmless from and shall process and defend at its own expense all claims, demands, or suits at law or equity arising in whole or in part from the CONSULTANT's negligence or breach of any of its obligations under this AGREEMENT; provided that nothing herein shall require a CONSULTANT to indemnify the COUNTY or the State against and hold harmless the COUNTY or the State from claims, demands or suits based solely upon the conduct of the COUNTY or State, their agents, officers and employees; and provided further that if the claims or suits are caused by or result from the concurrent negligence of (a) the CONSULTANT'S agents or employees, and (b) the COUNTY or the State, their agents, officers and employees, this indemnity provision with respect to (1) claims or suits based upon such negligence, and (2) the cost to the COUNTY or the State of defending such claims and suits shall be valid and enforceable only to the extent of the CONSULTANT'S negligence or the negligence of the CONSULTANT's agents or employees.

The CONSULTANT'S relation to the COUNTY shall be at all times as an independent contractor.

The CONSULTANT shall comply with all applicable sections of the applicable Ethics laws, including RCW 42.23, which is the Code of Ethics for regulating contract interest by municipal officers.

The CONSULTANT specifically assumes potential liability for actions brought by the CONSULTANT's own employees against the COUNTY and, solely for the purpose of this indemnification and defense, the CONSULTANT specifically waives any immunity under the state industrial insurance law, Title 51 RCW.

Unless otherwise specified in the AGREEMENT, the COUNTY shall be responsible for administration of construction contracts, if any, on the PROJECT. Subject to the processing of a new sole source, or an acceptable supplemental agreement, the CONSULTANT shall provide On-Call assistance to the COUNTY during contract administration. By providing such assistance, the CONSULTANT shall assume no responsibility for: proper construction techniques, job site safety, or any construction contractor's failure to perform its work in accordance with the contract documents.

The CONSULTANT shall obtain and keep in force during the terms of the AGREEMENT, or as otherwise required, the following insurance with companies or through sources approved by the State Insurance Commissioner pursuant to Title 48 RCW.

Insurance Coverage

A. Worker's compensation and employer's liability insurance as required by the STATE.
B. Commercial general liability and property damage insurance in an aggregate amount not less than two million dollars ($2,000,000) for bodily injury, including death and property damage. The per occurrence amount shall not exceed one million dollars ($1,000,000).
C. Vehicle liability insurance for any automobile used in an amount not less than a one million dollar ($1,000,000) combined single limit

Excepting the Worker's Compensation Insurance and any Professional Liability Insurance secured by the CONSULTANT, the COUNTY will be named on all policies as an additional insured. The CONSULTANT shall furnish the COUNTY with verification of insurance and endorsements required by the AGREEMENT. The COUNTY reserves the right to require complete, certified copies of all required insurance policies at any time.

All insurance shall be obtained from an insurance company authorized to do business in the State of Washington. The CONSULTANT shall submit a verification of insurance as outlined above within fourteen (14) days of the execution of this AGREEMENT to the COUNTY.

No cancellation of the foregoing policies shall be effective without thirty (30) days prior notice to the COUNTY.

The CONSULTANT'S professional liability to the COUNTY shall be limited to the amount payable under this AGREEMENT or one million ($1,000,000) dollars, whichever is greater, unless modified by Exhibit "L". In no case shall the CONSULTANT'S professional liability to third parties be limited in any way.

The COUNTY will pay no progress payments under section V until the CONSULTANT has fully complied with this section. This remedy is not exclusive; and the COUNTY and the STATE may take such other action as is available to it under other provisions of this AGREEMENT, or otherwise in law.

XIV Extra Work

A. The COUNTY may at any time, by written order, make changes within the general scope of the AGREEMENT in the services to be performed.

B. If any such change causes an increase or decrease in the estimated cost of, or the time required for performance of any part of the work under this AGREEMENT, whether or not changed by order, or otherwise affects any other terms and conditions of the AGREEMENT, the COUNTY shall make an equitable adjustment in the (1) maximum amount payable; (2) delivery or completion schedule, or both; and (3) other affected terms and shall modify the AGREEMENT accordingly.

C. The CONSULTANT must submit any "request for equitable adjustment," hereafter referred to as "CLAIM," under this clause within thirty (30) days from the date of receipt of the order. However, if the COUNTY decides that the facts justify it, the COUNTY may receive and act upon a CLAIM submitted before final payment of the AGREEMENT.

D. Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the CONSULTANT from proceeding with the AGREEMENT as changed.

E. Notwithstanding the terms and conditions of Paragraphs (A) and (B) above, the maximum amount payable for this AGREEMENT, shall not be increased or considered to be increased except by specific written supplement to this AGREEMENT.

XV Endorsement of Plans

If applicable, the CONSULTANT shall place its endorsement on all plans, estimates, or any other engineering data furnished by it.

XVI Federal and State Review

The Federal Highway Administration and the Washington State Department of Transportation shall have the right to participate in the review or examination of the work in progress.

XVII Certification of the Consultant and the County

Attached hereto as Exhibit "M-1(a and b)" are the Certifications of the CONSULTANT and the COUNTY, Exhibit "M-2" Certification Regarding Debarment, Suspension and Other Responsibility Matters – Primary Covered Transactions, Exhibit "M-3" Certification Regarding the Restrictions of the Use of Federal Funds for Lobbying and Exhibit "M-4" Certificate of Current Cost or Pricing Data. Exhibit "M-3" is required only in AGREEMENTS over $100,000 and Exhibit "M-4" is required only in AGREEMENTS over $500,000.

XVIII Complete Agreement

This document and referenced attachments contain all covenants, stipulations, and provisions agreed upon by the parties. No agent, or representative of either party has authority to make, and the parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein. No changes, amendments, or modifications of the terms hereof shall be valid unless reduced to writing and signed by the parties as an amendment to this AGREEMENT.

XIX Execution and Acceptance

This AGREEMENT may be simultaneously executed in several counterparts, each of which shall be deemed to be an original having identical legal effect. The CONSULTANT does hereby ratify and adopt all statements, representations, warranties, covenants, and agreements contained in the proposal, and the supporting material

submitted by the CONSULTANT, and does hereby accept the AGREEMENT and agrees to all of the terms and conditions thereof.

IN WITNESS WHEREOF, the parties hereto have executed this AGREEMENT as of the day and year shown in the "Execution Date" box on page one (1) of this AGREEMENT.

SNOHOMISH COUNTY

8/8/13
Signature

PETER B. CAMP
Executive Director
Title

BERGERABAM INC.

Signature

VICE PRESIDENT
Title

CONTRACT TEMPLATE ONLY
REVIEWED AND APPROVED:
Gordon W. Sivley
Deputy Prosecuting Attorney
Date: June 12, 2012

COUNCIL USE ONLY
Approved: 8-7-13
Docfile: D-8

EXHIBIT A-1
Scope of Work

PROJECT DESCRIPTION

The COUNTY desires to restore the roadway connection of the Index-Galena Road between project design Mileposts 6.088 and 7.032 by constructing a new roadway realigned to the south and east of the original roadway which was damaged during flooding of the North Fork of the Skykomish River in November of 2006. The COUNTY has progressed the project design to an approximate 60% level of completion and these plans shall be the basis for completion of the overall project design and construction document preparation.

BergerABAM, the CONSULTANT, including the firm of Shannon & Wilson, hereinafter called the SUBCONSULTANT, together referred here forward as the CONSULTANT, shall provide engineering services to:

1. Study and design a new bridge at the north of the new roadway project limit near the connection of the new roadway to the existing roadway. The proposed bridge, centered at approximately STA 55+00 and approximately 180 feet in length, will span over an established wetland and stream area.
2. Complete design of the following identified project elements and as included in the current set of preliminary 60 Percent Submittal plans prepared by the COUNTY:
    A. Walls and Slopes – As shown on the 60% plans; includes reinforced soil slopes (RSS), rock slopes, structural earth walls (SEW), and soldier pile walls, or other cut-slope walls.
    B. Debris Diversion Berm – Located at approximate STA 53+00 on the right (upslope) side of the roadway.
    C. Armored Crossing – Located at approximate STA 29+00 and generally oriented as currently shown on 60% plans.
    D. Rock Fall Mitigation Systems – May be needed in areas of rock cut into large bedrock boulders and bouldery colluvium.
    E. Bridge Scour and Riverbank Protection – Armored toe of slope in areas where there is high risk of channel migration, and protection of bridge abutments as required. This includes riverbank and scour protection features.

The engineering will be accomplished in four phases.

1. **Phase 1 services** include site investigations including site surveying for additional topographic data not supplied by the COUNTY for aforementioned identified project design elements A thru E, supplemental geotechnical investigation; hydraulic engineering study; preliminary bridge engineering and bridge study; and preliminary design input to permitting documents being prepared by the COUNTY.
2. **Phase 2 services** include field staking for 90% plan review and US Forest Service tree appraisal; bridge, wall, slope, debris berm, and armored crossing final design input to permitting documents being prepared by the COUNTY; and final design and preparation of the plans, specifications, and engineer's estimate (PS&E) for construction.
3. **Phase 3 services** include support services during bidding - responding to bidder's questions, preparation of addendum, pre-bid meeting attendance, and field staking for bidding.
4. **Phase 4 services** will be performed during the project construction are not included in this scope of services. Phase 4 services will be provided as supplemental services when the project enters the construction phase as agreed upon with the COUNTY.

The investigations in Phase 1 include any additional geotechnical investigation required and report supplement, a bridge hydraulic investigation and report, and site surveying and base mapping. During preliminary engineering, the preferred bridge alternative will be selected, for use in final design and permitting, and bridge design information will be provided as needed for environmental documents and permits.

During Phase 2, the CONSULTANT will provide engineering services to complete the project design work together with the COUNTY, to prepare a single, coordinated set of construction documents for the project.

DESIGN CODES AND STANDARDS

The following design codes will be used to conduct the design and analyses.

1. WSDOT Bridge Design Manual LRFD, version M 23-50.12, August 2012, includes Design Memorandums up to January 2013.
2. AASHTO LRFD Bridge Design Specifications, 6th Edition with current revisions.
3. AASHTO Guide Specifications for LRFD Seismic Bridge Design 2nd Edition (2011) with current revisions.

ESTIMATED LEVEL OF EFFORT

The estimated level of effort associated with providing these services is shown in Exhibit E, and is based upon the scope of work, assumptions, and task descriptions provided below.

ASSUMPTIONS

The scope of work defined within this document includes the assumptions noted below.

1. The current 60% level completion of the roadway design and plans prepared by the COUNTY will establish the roadway alignment, stationing, profile and approximate extents of specific project elements such as walls, slopes, armored crossing, debris berm, revetment and riverbank protection, and rock fall mitigation systems subject to minor modifications during design completion.
2. The COUNTY will complete the PS&E for the roadway design, including horizontal alignment, vertical profile, staging areas and temporary access (excluding structures), site preparation and erosion control, existing pavement removal, grading, surfacing, stormwater features including culverts (excluding armored crossing), channelization, signage, planting, and traffic control. Following the 60 percent revised PS&E submittal with additional topographic survey data included, the roadway design geometry – horizontal alignment, profile, and superelevation - will be considered essentially fixed for finalization of the design effort and remaining PS&E submittals.
3. The COUNTY will determine the storm drainage conveyance and water quality treatment for the project.
4. The profile and width of the proposed bridge structure will tie-in and match the current 60% level design completion roadway alignment and profile established by the COUNTY subject to minor modifications during design completion.
5. The new bridge is a two-lane bridge with minimal shoulders. Final width and length will be determined during the Phase 1 bridge study.
6. It is assumed that utilities are not present within the project limits and therefore will not be field located by subsurface methods. However, two 6-inch-diameter openings will be provided in the bridge diaphragms for future accommodation.
7. Cross-sections of the active river channel will not be surveyed, but the dry portions of the potential side channel at the bridge will be surveyed as required for hydraulic modeling and analysis.
8. It is assumed that contaminated soils do not exist within the anticipated project limits.
9. Soil conditions may vary from those conditions where the actual site investigations will be conducted. Because of the inherent uncertainties in subsurface conditions, underground conditions may occur that could affect the total project cost and/or execution.
10. It is anticipated that the bridge analysis work will be completed using the most recent version of SAP 2000 and PG Super, supplemented with Excel spreadsheets where required.
11. The plans will be prepared in accordance with current COUNTY drafting standards, and all electronic drawings submitted by the CONSULTANT as part of any deliverable shall be in AutoCAD 2013 format, or later version(s) as adopted by the COUNTY during the project duration, per the requirements of Exhibit "C".
12. The CONSULTANT will prepare the plans, estimate, and technical special provisions for the bridge and specific project elements described previously. The COUNTY will prepare the roadway plans, estimate, and technical special provisions, and assemble the combined bid documents, including distribution of the contract documents and required amendments to plan centers and prospective bidders.
13. No rights-of-entry are required.

14. Survey control established by the COUNTY shall be used.
15. Right-of-Way plan services are not included at this time but may be added later as requested by the COUNTY.
16. The design schedule is premised on a notice-to-proceed (NTP) date of 1 August 2013. The schedule will be revised in a mutually agreeable fashion based upon the actual date that the written NTP is received.
17. The overall duration of the project and the anticipated sequence of the CONSULTANT's work are shown in the preliminary project schedule attached.

TASK 1 – PROJECT MANAGEMENT (PHASE 1, 2 & 3)

Task 1.1 Project Coordination

The CONSULTANT will provide project management and communications between the CONSULTANT team and the COUNTY. Coordinating with the COUNTY, the CONSULTANT shall develop a project communication plan that establishes protocol for contact, distribution of information, written documentation, and other communication procedures at the beginning of the project.

The CONSULTANT will perform project administration and management tasks as follows.

- Prepare and submit monthly invoices.
- Prepare monthly progress reports summarizing the status of the budget, highlights, details, issues, approved changes, plans for next period.
- Prepare and update the project schedule as circumstances require. The project schedule will be developed using Microsoft Project.
- Prepare subconsultant agreements and perform ongoing subconsultant coordination.
- Maintain all contract-required documentation.

Task 1.2 Progress Meetings

The CONSULTANT will attend meetings with the COUNTY to coordinate the engineering study and design efforts; eight face-to-face meetings are assumed, as well as a monthly conference call through Phase 2 of the project.

Task 1.3 Management of Subconsultants

The CONSULTANT will manage the SUBCONSULTANT and any other subconsultants that may be added during the duration of the project.

Task 1.4 Project Demobilizations and Restarts

It is anticipated that the project will undergo two periods on inactivity during Phase 2 of the design to accommodate the expected permitting, right-of-way, and easement process timelines. These periods are shown on the attached preliminary design schedule for the project following the 90 percent and 100 percent submittals of plans, specifications, and estimates (PS&E). The CONSULTANT will perform services needed to accomplish two demobilizations and two restarts of project activities, including possible transitions of project staff assigned and record keeping during the demobilization process to facilitate efficient restart of project activities.

Task 1.5 Project Closeout

The CONSULTANT will perform services necessary to document and closeout the project file. Survey data shall be provided to the COUNTY in an electronic format with no loss of coordinate accuracy, point and string identifiers, feature codes, and point and string types.

All CADD data will be provided to the COUNTY in a format that can be used directly by AutoCAD® Civil 3D® and LandXML format with no translation and/or loss of COUNTY standard levels, symbologies, colors, weights, and base map/sheet file organization.

TASK 2 SURVEY AND BASE MAPPING (PHASE 1, 2 & 3)

The CONSULTANT will provide the following services: ground based topographic mapping survey data for specific project design elements – bridge, walls, debris berm, armored crossing, culverts and erosion and scour protection areas; field staking for 90% design review and for US Forest Service tree cruise/appraisal; and field staking for RFP site walks and bidding purposes.

All CONSULTANT survey data will be incorporated into the existing base file developed by the COUNTY for this project. Site survey data will be compiled in AutoCAD® Civil 3D® 2013 for the basis of design. This file will show the site's existing condition and surface capable of displaying 2-foot contours. Dynamic notes, control, and other observations (prepared for 1"=20' plans) will be included in this file to aid in the design progression.

Task 2.1 Survey and Topographic Mapping - Identified Project Elements (Phase 1)

The CONSULTANT will verify the coordinate values supplied by the COUNTY for the established control stations through the length of this project's extents and through two adjacent baselines outside the extents of this project (4 additional stations) for purposes of longevity. Topographic survey will be performed within the areas described for identified project elements proposed as follows by station and offset relative to the proposed re-alignment of Index-Galena Road as shown on the COUNTY 60% plan set. This survey data will be added to the data captured previously by the COUNTY. The goal is to perform sufficient site survey to adequately tie the toe of slopes and wall base locations along the existing ground surface, confirm preliminary wall extents and heights, and define grading required along the length of the project, especially in the vicinity of project engineered design elements.

Culverts and Armored Crossing

- An approximate rectangular area of 100' by 50'area encompassing each of 14 proposed culvert locations will be surveyed
- Armored crossing – Station 27+90 to 29+90 along the proposed roadway prism, including a 50' wide area by 100'long upstream and 50' wide area by 100 ' long downstream for hydraulic modeling requirements.
- These approximate centerline culvert Stations are as follows: 13+28, 15+86, 17+25, 19+70, 26+57, 28+98, 31+61, 33+60, 35+89, 44+84, 46+39, 47+25, 50+20, and 51+20

Reinforced Soil Slopes (RSS)

- Between centerline Stations 14+00 to 18+00 a row of ground shots will be taken at 18' Left and 28' left on a 25' interval
- Between centerline Stations 23+00 to 28+40 a row of ground shots will be taken at 30' Left and 40' left on a 25' interval.
- Between centerline Stations 34+50 to 40+25 a row of ground shots will be taken at 18' Left and 28' left on a 25' interval
- Between centerline Stations 49+00 to 52+25 a row of ground shots will be taken at 18' right and 28' right on a 25' interval
- Between centerline Stations 52+25 to 54+10 a row of ground shots will be taken at 25' Left and 35' left on a 25' interval

MSE (Mechanically Stabilized Earth) Wall, Rock Fill Slopes and Soldier Pile Walls

- Between centerline Stations 21+75 to 23+00 a row of ground shots will be taken at 40' left and 50' left on a 25' interval
- Between centerline Stations 30+00 to 32+75 a row of ground shots will be taken at 60' left and 70' left on a 25' interval
- Between centerline Stations 35+00 to 37+50 a row of ground shots will be taken at 18' right and 28' right on a 25' interval
- Between centerline Stations 40+25 to 43+50 a row of ground shots will be taken at 30' left and 40' left on a 25' interval

- Between centerline Stations 43+25 to 44+75 a row of ground shots will be taken at 18' right and 28' right on a 25' interval
- Between centerline Stations 45+00 to 49+00 a row of ground shots will be taken at 18' left and 28' left on a 25' interval

Debris Diversion Berm

- An approximate area from Station 52+00 to 54+90 at centerline to 180' offset right.

Bridge Area

- An approximate area from Station 54+00 to 57+00 at centerline to 50' left to 50' right respectively.
- Hydraulic Cross Section Work (the depressed area currently retaining water at the proposed bridge location as shown on the 60% plan set). Beginning at centerline Station 54+25 to the Northeast along depressed area 400', at a width of 160'+/- & beginning at centerline Station 54+25 to the Southwest along depressed area 200', at a width of 120'+/-.

Riverbank Protection Area

- Between centerline Stations 45+00 to 49+50 a row of ground shots will be taken at 50' left on a 25' interval to add to the survey data already captured by the COUNTY.

Topographic efforts for the areas listed above will include the acquisition of ground elevations, tops, toes, grade breaks, major rock extrusions and boulders (4' nominal diameter and larger), and edges of water features.

Task 2.2 Field Staking for 90% Design Review and Timber Appraisal (Phase 2)

A one-time field staking of the design will be performed during the design phase (at approximately the 90% design completion) to support design review, to confirm project cut/ fill quantities and to aid the US Forest Service timber cruise/appraisal effort.

As part of this effort, the CONSULTANT will perform the required field survey within the 90% plan easement lines. The cut/fill slope stakes (coincident with the clearing limits) will be set on both sides of the proposed centerline alignment (also to be set), to show the full extents of the proposed roadway's cut/fill as visual evidence of the quantities in and around the respective improvements. The easement line stakes will be established at a 50 foot +/- station interval including all major jogs to show the project's easement lines in the field for visual evidence of the tree appraisal required. The stakes will be flagged and intervisible flagging will be established at a 50 foot +/- station intervals for the project's footprint and easement area as required for the US Forest Service timber for cruise/appraisal.

Task 2.3 Field Staking for RFP (Phase 3)

A one-time field staking will be performed during the RFP to provide final project cut and fills limits to support the bidding process. As part of this effort, the CONSULTANT will perform the required field layout based upon the 100% plan set. The cut/fill slope stakes (coincident with the 100% clearing limits) will be verified and refreshed or reset on both sides of the proposed centerline alignment (also to be verified and refreshed or reset), to show the full extents of the proposed roadway's cut/fill per the 100% plans allowing a visual evidence of the tree removal required for this project in addition to the final cut/fills evidenced by the respective slope stakes.

Task 2.4 Additional Topographic Survey Allowance (Phase 1 & 2)

The CONSULTANT will provide up to three additional days of site survey time and a revised basemap to document the field measured site conditions for extra unidentified topographical features if needed.

Deliverables

A file, developed in AutoCAD® Civil 3D® 2013 including the information listed above, will be the deliverable. This file will serve as the basis of this project's design. An existing ground surface model in AutoCAD® Civil 3D® 2013 and LandXML v1.2 format will be provided as part of this effort. Photos, field notes, videos and sketches captured during this projects survey effort will also be included as part of the existing conditions documentation. Construction staking and layout notes and grade sheets will also be provided for the slope and centerline staking performed.

TASK 3 GEOTECHNICAL ENGINEERING (SUBCONSULTANT)

The SUBCONSULTANT will provide geotechnical engineering services as required to complete the design and PS&E for the construction of the Index-Galena Road Realignment between project design Mileposts 6.088 and 7.032.

The geotechnical engineering will rely on previous studies including:

- The Final Geotechnical Study prepared for the COUNTY by The SUBCONSULTANT (December 2012).
- A geotechnical site boring performed by the COUNTY near the proposed north bridge abutment near Station 57+70 (November 2012).

The SUBCONSULTANT's Final Geotechnical Study contains the results of their geotechnical studies to date to support preparation of the PS&E, including descriptions of surface and subsurface conditions, and a site plan showing boring locations and other pertinent features. Summary boring logs, charts, and graphs indicating laboratory test results are also included. The results of engineering evaluations and preliminary geotechnical engineering recommendations pertaining to the proposed bridge are also presented.

Task 3.1 Project Management

The SUBCONSULTANT will perform project management services for geotechnical engineering tasks including invoicing, scheduling of work, communications with the CONSULTANT and the COUNTY, QA/QC, and will attend three progress meetings held in coordination with the design review meetings at the CONSULTANT's offices.

Task 3.2 Preliminary Design (Phase 1)

During Phase 1, the SUBCONSULTANT will provide additional geotechnical consultation and field explorations, as needed, review the project documents as additional site survey data is available, and supplement their geotechnical study as required.

For the purposes of establishing an estimate of expected effort, the SUBCONSULTANT will provide geotechnical consultation for:

- Bridge Foundations - per Task 6 required information
- Walls and Slopes
- Large Boulder and Rock Outcrop Excavation
- Rock Fall Mitigation Systems
- Armored Crossing

Task 3.2.1 Bridge Foundations

Since the 2012 Final Geotechnical Study, the COUNTY decided to span the creek and low lying area near Sta. 55+00 with a long single span bridge instead of a bridge with multiple shorter spans. Therefore, the bridge foundation design must be reconsidered. Tasks will include:

- Provide charts of estimated axial resistance with depth for drilled shafts and driven piles
- Provide estimated lateral resistance recommendations (LPILE parameters) for drilled shafts and driven piles
- Perform drivability (WEAP) analysis for driven piles
- Provide estimated settlement of selected bridge foundation
- The CONSULTANT and SUBCONSULTANT will attend a 2 hour meeting with the COUNTY to review the bridge design Type, Size, and Location (TS&L) study.

Task 3.2.2 Walls and Slopes

The SUBCONSULTANT will provide the CONSULTANT with preliminary details and configurations for mechanically-stability earth (MSE) walls and reinforced soil slopes (RSS), including facing and drainage options. Aesthetic treatment of the wall and slope faces will be considered, including review and selection of preferred facing options by the COUNTY and US Forest Service. Depending on the results of new topographical surveys,

the geometry of the proposed walls and slopes may change significantly. Changes to the wall and slope geometry may necessitate re-evaluation of the preliminary design of many or all of the proposed structures. The location and geometry of each wall and slope will be confirmed and, if necessary, redesigned. It is assumed herein that topographical revisions will result in re-evaluation of the preliminary design of 1 MSE wall, 1 soldier pile wall, and 2 RSS. Finalization of the design for all anticipated walls and slopes (i.e., 2 MSE, 2 soldier pile, and 4 RSS) is included. Tasks will include:

- Cantilever soldier pile walls (2 locations) – The two soldier pile wall locations assumed are STA 35+00 to 37+50 and STA 43+50 to 44+50.
    - Provide static lateral earth pressure design recommendations for cantilever soldier pile walls
    - Perform global stability analyses for selected soldier pile wall configurations
    - Provide soldier pile wall drainage recommendations
- Mechanically-Stabilized Earth Walls (2 locations) - The two MSE wall locations assumed are STA 14+50 to 17+50 (currently shown as RSS) and STA 45+00 to 49+00.
    - Provide static lateral earth pressures design recommendations
    - Provide bearing resistance design recommendations
    - Provide sliding resistance design recommendations
    - Perform global stability analyses
    - Perform sliding and bearing analyses
    - Provide minimum reinforcement lengths to satisfy external stability (global, sliding, bearing, and overturning stability)
    - Calculate wall settlement
    - Provide MSE wall facing recommendations
    - Provide MSE wall drainage recommendations
- Reinforced Soil Slopes (4 locations)
    - Perform global and compound stability analyses
    - Provide sliding resistance design recommendations
    - Provide minimum reinforcement lengths to satisfy external and compound stability
    - Provide reinforced soil slope facing recommendations

Task 3.2.3 Large Boulders and Rock Outcrop Excavation

A preliminary study will be performed to estimate the quantity of boulders larger than 4 feet in diameter and intact rock. The study will include counting and measuring boulders visible at the ground surface, and statistical analyses to develop distributions of boulders in the colluvial deposits. This data and statistical analyses will be used to develop boulder quantity estimates for the opinion of probable construction costs, and for the contractor bids.

The SUBCONSULTANT will develop preliminary recommendations for methods to break up large boulders and bedrock, including blasting, expansive grouts, mechanical splitters and blasting blankets.

Task 3.2.4 Rockfall Mitigation Systems

An assessment will be conducted to identify locations and recommend rockfall mitigation systems. Specific tasks will include:

- Provide conceptual details and sketches for rockfall mitigation options.
- Participate in 1 meeting with the CONSULTANT to review rockfall mitigation systems and potential locations.

Task 3.2.5 Armored Crossing

The SUBCONSULTANT will consult with the CONSULTANT regarding preliminary design elements of the proposed armored crossing. Specific tasks will include:

- Confirm orientation and location of the normal stream flow channel during field reconnaissance.
- Confirm the HEC-RAS model and estimate the mean annual flood design conditions for sizing the normal stream flow channel.
- Examine the potential for erosion and scour upstream and downstream of the armored crossing.
- Calculate design impact load from debris on the armored crossing during a debris flow event.
- Global stability of armored crossing and roadway prism during a debris flow event.

Task 3.2.6 Riverbank Scour and Erosion Protection

The SUBCONSULTANT will provide geotechnical consultation for riverbank scour and erosion protection, including partial excavation of alluvial deposits, rock backfill and installation of driven H-piles for structural reinforcement. Specific tasks will include:

- Provide check on global stability of rock backfill and roadway after scour scenario.
- Provide conceptual details and sketches for installation of driven piles.

Task 3.2.7 Field Explorations

Field explorations will include:

- Site visits with the project team to review alignment and structures.
- Field reconnaissance to mark rock outcrops and large boulders for survey and confirm orientation and location of the armored crossing normal flow channel.

Task 3.2.8 Meetings

Key project elements and findings will be discussed with the services and select stakeholders. Likely participants will include the COUNTY, USACE, WDFW, and US Forest Service. Time has been provided to attend up to two such meetings at the project site.

The CONSULTANT and SUBCONSULTANT will attend a 2 hour meeting with the COUNTY to review the bridge design Type, Size, Location (TS&L), scour design and riverbank erosion concept design plans.

Task 3.2 Assumptions

1. The proposed bridge will be founded on drilled shafts or driven piles.
2. The proposed bridge will be a single-span, approximately 180 feet long.
3. Bridge foundation axial resistance will be analyzed for no more than 2 shaft diameters and 3 pile sizes.
4. Bridge pile lateral resistance will be analyzed using LPILE parameters.
5. Drivability analysis will be analyzed for no more than 3 pile sizes and 2 hammers.
6. Bridge foundation settlement estimate will be based on only 1 condition.
7. New topographical surveys will result in significant geometry changes to walls and slopes from those assumed for the SUBCONSULTANT's Final Geotechnical Study (2012). Reanalysis of 2 soldier pile walls, 2 MSE walls and 4 reinforced soil slopes will be required. This reanalysis will be a re-check of global stability following the incorporation of additional topographic survey data to the project basemap and review of currently shown wall and slopes.
8. Earth pressures and global stability analyses for soldier pile walls will consider the static condition only.
9. Global stability analyses and sliding, bearing and overturning analyses for MSE walls will consider the static condition only.
10. Boulders larger than 4 feet in diameter are difficult to move with standard equipment and will be blasted.
11. The distribution of boulders at the ground surface is representative of boulders in colluvial deposits.
12. Rockfall mitigation systems to be considered include anchored mesh, mesh drapes, catchment fences and catchment ditches.

13. Rockfall sources include cut slopes in soil, bedrock, and broken slopes.
14. The SUBCONSULTANT will have access to the current hydraulic HEC-RAS model for the project area.
15. Design memorandum will include a draft copy in electronic format only, and 1 final paper and electronic copy.
16. The SUBCONSULTANT will attend 3 site visits with 3 attendees each.
17. Field reconnaissance will require a 2-person field crew for 2 days.

Deliverables

- Geotechnical Design Memorandum for Bridge Foundations
- Geotechnical Design Memorandum for Soldier Pile Walls
- Geotechnical Design Memorandum for MSE Walls
- Geotechnical Design Memorandum for Reinforced Soil Slopes
- Geotechnical Design Memorandum for Large Boulders and Rock Outcrop Excavation
- Geotechnical Design Memorandum for Rockfall Mitigation Systems
- Geotechnical Design Memorandum for Armored Crossing
- Geotechnical Appendix to the Hydraulic Report

Task 3.3 Final Design (Phase 2)

The SUBCONSULTANT will provide redline review and comments on the revised 60% design plans based on new survey information provided during preliminary design. The SUBCONSULTANT will provide the CONSULTANT with design calculations, drawings and layouts, details, quantities, unit costs, and other information needed to prepare the 90% and Final design plans, Summary of Geotechnical Conditions, project-specific special provisions, and engineer's opinion of probable construction cost for the following identified project elements:

1. Walls and Slopes
2. Large Boulders and Rock Outcrops
3. Debris Diversion Berm
4. Armored Crossing
5. Rock Fall Mitigation Systems

The SUBCONSULTANT will provide drawings and details in CAD format as needed for the CONSULTANT to produce the 90% and Final Plans.

Task 3.3.1 60% Design Plan Review

The SUBCONSULTANT will provide redline review and comments on the revised 60% design plans which include the additional topographic survey data in the project basemap and revised designs of the roadway, walls, slopes, and design of other elements, including the proposed bridge.

Task 3.3.2 Walls and Slopes

The SUBCONSULTANT will provide design input for reinforced soil slopes, including calculations, drawings and layouts necessary for the CONSULTANT to produce the 90% and Final design plans.

Special provisions will be prepared for driven piling, structural earth walls, geosynthetic retaining walls, soldier pile and soldier pile and tieback walls, and permanent ground anchors.

Quantities and unit prices will be estimated for bid items required for the walls and slopes. Unit prices will be estimated from recent bid experience with similar projects, WSDOT unit bid analysis, contractor inquiries, and Means construction estimating manuals.

Task 3.3.3 Large Boulders and Rock Outcrops

The SUBCONSULTANT will provide drawing details and layouts available for the CONSULTANT to prepare the final contract drawings showing the locations of known large boulder and rock outcrops. The SUBCONSULTANT will prepare the project specific special provisions required for the removal or excavation of large boulders and rock outcrops, including blasting, rock excavation, rock bolts, and other recommended methods from Task 3.2.3. Quantities and unit prices will be estimated for bid items required for the large boulders and rock outcrops. Boulder quantities will be based on the distribution estimated from the sizes of boulders visible on the ground surface.

Task 3.3.4 Debris Diversion Berm

The SUBCONSULTANT will provide design input for the debris diversion berm, including calculations and drawings necessary for the CONSULTANT to produce the 90% and Final design plans.

Quantities and unit prices will be estimated for bid items required for the debris diversion berm.

Task 3.3.5 Armored Crossing

The SUBCONSULTANT will provide design input for the armored crossing, including calculations, drawings and layouts necessary for the CONSULTANT to produce the 90% and Final design plans.

Quantities and unit prices will be estimated for bid items required for the debris diversion berm.

Task 3.3.6 Rock Fall Mitigation Systems

The SUBCONSULTANT will provide design input for the rock fall mitigation systems, including calculations, drawings and layouts necessary for the CONSULTANT to produce the 90% and Final design plans. Special provisions will be prepared for selected systems that may include mesh drapes, anchored mesh, catchment ditches and catchment fences.

Quantities and unit prices will be estimated for bid items required for the rock fall mitigation systems.

Task 3.3.7 60%, 90% Final Plan Review Meetings and Calls

The SUBCONSULTANT will attend three, two hour design review meeting for each of the revised 60%, 90% and Final Plan submittals at COUNTY offices. The SUBCONSULTANT will attend up to four, one hour conference calls for plan development and review.

Deliverables

- Design calculations, drawings and layouts, details, quantities, unit costs, and other information needed for the subtask items above to prepare the 90% and Final design plans, special provisions, Summary of Geotechnical Conditions, and construction costs.
- Summary of Geotechnical Conditions, per WSDOT

Task 3.4 Geotechnical Support During Bidding (Phase 3)

The SUBCONSULTANT will provide the following services during this phase.

- Respond to bidders' inquiries during the bid period (3 assumed)
- Preparation of addendum during the bid period (1 assumed)
- Attend the pre-bid meeting

TASK 4 HYDRAULIC ENGINEERING (SUBCONSULTANT)

The SUBCONSULTANT will provide hydraulic river engineering support for the design of the new bridge structure centered at approximate STA 55+00 and the protection of the new roadway toe of slope in areas where the toe is located adjacent to the river or within the identified channel migration zone (CMZ).

This scope of services covers data collection, hydrologic analysis, hydraulic modeling and estimating scour depths, and hydraulics design report support design of the new bridge, and revetment/riverbank and scour protection at the bridge and along the toe of slope for the new roadway.

Task 4.1 Task 4 Project Management

The SUBCONSULTANT will perform project management services for hydraulic engineering tasks including invoicing, scheduling of work, communications with the CONSULTANT and the COUNTY, QA/QC, and attendance at three progress meetings held in coordination with the design review meetings at the COUNTY offices.

Task 4.2 Field Work and Studies (Phase 1)

Task 4.2.1 Data Collection

The SUBCONSULTANT will gather existing data, flood study and hydraulic models, and previous river engineering and hydraulic studies performed on the Index Galena Road to be made available by the COUNTY. These include the current COUNTY effective HEC-RAS flood model for the North Fork Skykomish River, flood hydrology, floodplain mapping, LiDAR, bathymetric and topographic survey and surface models, aerial photos, CMZ delineation documents and shapefiles. The SUBCONSULTANT will review existing models, surfaces, hydraulics to be used for design and check for errors and consistency prior to initiating modeling efforts.

Task 4.2.2 Field Reconnaissance

The SUBCONSULTANT will conduct a two person, two day field reconnaissance to confirm current hydraulic and geomorphologic conditions and changes since the 2006 flood event, and to confirm previous river hydraulics and geomorphologic channel migration zone studies (Lochner, 2011 and Anchor, 2009). The field reconnaissance will include assessment of site conditions for developing the proposed conditions model, and limited bed material sampling using Wolman Pebble Counts in support of erosion and scour analyses.

Task 4.2.3 Existing Hydrology and Hydraulics

The COUNTY has completed flood hydrology and an updated hydraulic HEC-RAS model for the Index Galena Road realignment and bridge study reach (Nelson, 2010). The current model is based on the Anchor 2009 studies including LiDAR updates, some topographic and bathymetric survey data, and rough calibration and checking flood water surface elevations in the field. The model has since been modified by the COUNTY based on Northwest Hydraulic Consultants' comments (NHC, 2009) on the Anchor model, and is identified as the North Fork Skykomish, NF-SKY-V5.prj file (Nelson, 2010).

The SUBCONSULTANT will review the model and evaluate whether it adequately represents current site conditions. It is assumed that a limited amount of recent surveys performed by the COUNTY and current project surveys associated with this scope of services will be incorporated into the current HEC-RAS model geometry extending from 1,000 feet upstream of the proposed bridge to 1,000 feet downstream of the start of the downstream road realignment (near the Trout Creek confluence).

Task 4.2.4 Bridge Abutment and Approaches – Flooding, Erosion and Scour Estimates

For the proposed bridge, estimated flood water surface elevations, debris loads, erosion and scour depth estimates will be provided for the bridge abutments, adjacent roadway approaches, and intermediate piers as required by the alternatives analysis. River hydraulics, meander migration, channel avulsions, the current CMZ delineation, and the adjacent tributary debris torrent will be considered in evaluating and recommending erosion and scour protection features for the proposed bridge and approach abutments.

The COUNTY HEC-RAS model will be modified to represent proposed bridge design conditions. This will include up to three combined bridge, bridge approach embankments and channel geometry configurations.

Bridge and roadway erosion and scour design will be performed to meet WSDOT Hydraulics Manual, Federal Highways Administration bridge, erosion and scour design criteria, which include scour protection for the 100-year flood, 1 percent Annual Exceedance Probability (AEP) event, and checked against the 500-year, 0.2 percent AEP. Criteria set forth in Chapter 4 of the WDFW Water Crossing Design Guidelines (2013) will be evaluated for proposed bridge. This scope includes a review of reach analysis criteria using information from the Channel Migration Zone studies, and a separate analysis of the velocity ratio conditions for the historic conditions and proposed bridge. These criteria and findings will be summarized in the hydraulics report.

The hydraulic model will be used to calculate the design water surface elevations for the selected bridge alternative, which will be used to design the low chord of the bridge. The CONSULTANT will recommend to the COUNTY an appropriate level of freeboard for debris passage. The CONSULTANT and the COUNTY will

evaluate if fish passage criteria are being met. The model will also provide data to evaluate scour and erosion conditions at the bridge, abutments and roadway approaches.

Task 4.2.5 Riverbank Stability Assessment and Conceptual Plans

The SUBCONSULTANT will evaluate the potential for erosion and scour in areas where the proposed roadway embankment will be within the delineated Channel Migration Zone (CMZ) or 100-year floodplain. River hydraulics, meandering, channel avulsion, the delineated CMZ, and the tributary confluences will be considered in evaluating and recommending erosion and scour protection measures for the proposed roadway fill embankment areas.

River bank erosion and scour protection measures design will use the methods outlined in the Washington State, Aquatic Habitat Protection, Integrated Streambank Protection Guidelines (WDFW, 2003) and Federal Highways Administration design criteria for roadway erosion and scour protection. The river bank erosion and scour protection measures design will build on river bank stability details shown in the COUNTY February 2013 plans. Preliminary engineering analyses and plans will be provided for up to three typical river bank erosion, scour and habitat enhancement details along proposed roadway sections with: 1) structural walls, 2) reinforced soil slopes and mechanically stabilized earth walls, 3) alluvial river and stream bank and bar. Conceptual design of these features will include hydraulic stability analyses of large woody debris, vegetated banks, and rock placement to withstand erosion and scour conditions.

It is anticipated that foundation improvements will be required for sections of river that have potential to scour and undermine the roadway embankment or walls. The CONSULTANT will coordinate hydraulic and geotechnical analyses to develop up to two preliminary design details for these conditions. It is envisioned that the two foundation protection preliminary design alternatives will include 1) overexcavation of alluvial deposits down to colluvial deposits, with rock (riprap) backfill and 2) partial excavation of alluvial deposits, rock backfill and installation of driven H-piles for structural reinforcement. Concrete and grouting options will not be considered for environmental protection reasons.

The CONSULTANT and the COUNTY will confer with WDFW representatives to identify if the proposed measures are acceptable to satisfy bank stability and habitat requirements. A set of conceptual erosion and scour protection plans and associated engineering design will be accomplished in this task with design information required to complete permit applications submitted.

Task 4.2.6 Agency Meetings

Key project elements and findings will be discussed with the services and select stakeholders. Likely participants will include the COUNTY, Washington Department of Fish & Wildlife (WDFW), US Forest Service, and Washington State Department of Transportation (WSDOT) Local Programs. Time has been provided for the SUBCONSULTANT's hydraulic engineer to attend up to two, two hour meetings at the project site.

Task 4.2.7 Documentation

The results of the hydraulic and scour analyses will be documented in a hydraulic report. The report will include a description of the physical characteristics of the site, including photographs taken during the site reconnaissance, text, tables, and figures that describe the results of the hydraulic analysis, and revetment/riverbank protection recommendations. The CONSULTANT's report will include key hydraulic related data needed for permit application. A draft version of the report (1 digital copy) will be provided to the COUNTY for review and comment.

The CONSULTANT will attend a 2 hour meeting with the COUNTY to review the bridge design Type, Size, Location (TS&L), scour design and riverbank erosion conceptual design plans.

Based on COUNTY comments, The CONSULTANT will revise and finalize the report and provide 1 digital and 5 hard copies.

Task 4.2 Deliverables

- Draft and Final Hydraulics Report. Digital copies shall be provided in native Microsoft Word 2010 format and in PDF format.
- Conceptual Plans in PDF format and 5 (five) sets of hard copies.
- Complete copies of all updated hydraulic models with data files.

Task 4.3 Bridge Scour and Riverbank Protection Design (Phase 2)

The SUBCONSULTANT will provide bridge scour protection and riverbank erosion and scour protection design plans, details and special provisions specifications as outlined in the following sections.

Task 4.3.1 60% Design Plan Review

The SUBCONSULTANT will provide redline review and comments on the revised 60% design plans which include the additional topographic survey data in the project basemap and revised designs of the roadway, walls, slopes, and design of other elements, including the proposed bridge.

Task 4.3.2 Bridge Erosion and Scour Protection Design Plans & Details

The SUBCONSULTANT will provide 90% and Final plans, details and specification special provisions for bridge erosion and scour protection designs using the preferred alternatives from the conceptual designs (Section 4.2.5). Bridge erosion and scour protection features include rock (riprap) materials underneath the bridge. Large woody debris and plantings will not be evaluated beneath the bridge due to flood and debris conveyance considerations. Both rock and vegetated soil slopes with rock, wood and bioengineering will be provided for roadway approach sections that may have MSE walls and Reinforced Soil Slopes (RSS), and will use similar details as the roadway design sections.

Task 4.3.3 Riverbank Erosion and Scour Protection Design Plans & Details

The SUBCONSULTANT will provide 90% and Final plans, details and specification special provisions for riverbank erosion and scour protection designs. Riverbank erosion and scour protection features may include rock (riprap), piles, large woody debris, anchorage and planting plans that will be incorporated with the geotechnical MSE and RSS wall designs.

Task 4.3.4 60%, 90% Final Plan Review Meetings and Calls

The SUBCONSULTANT will attend three, two hour combined progress/design review meetings, one each for the revised 60%, 90% and Final Plan submittals at COUNTY offices. The SUBCONSULTANT will attend up to four, one hour conference calls for plan development and review.

Task 4.3 Deliverables

- Design calculations, drawings and layouts, details, quantities, unit costs, memoranda and other information needed for the subtask items above to prepare the 90% and Final design plans, special provisions and construction costs.

Task 4.4 Permitting Assistance

The SUBCONSULTANT will provide up to 48 hours of support to the CONSULTANT during review and input to environmental documents and permit applications. Besides verbal and other communication, the SUBCONSULTANT's deliverables will include:

- Technical documentation of hydraulic analyses: Relevant data will describe anticipated project impacts to flood characteristics, channel response, habitat benefits, etc.
- Quantity estimates and construction elements: Estimates of excavation and fill, riverbank protection measures, dewatering, site access, sequencing, costs, etc.

Task 4 Assumptions

1. The SUBCONSULTANT will attend up to three progress/design review meetings at COUNTY offices.
2. The COUNTY will provide requested HEC-RAS modeling files, CAD/GIS drawings and shapefiles and surfaces, in electronic formats.
3. The existing HEC-RAS model is developed based on LIDAR with some local survey information. The HEC-RAS model will be updated to incorporate limited amounts of recent survey data, from the COUNTY and as part of this scope of services, near the proposed bridge and roadway embankment to reflect existing conditions. The extents are 1,000 feet upstream from the proposed bridge to 1,000 feet downstream from the start of the project roadway realignment.

4. The CONSULTANT will provide bridge and roadway embankment plans and section details (elevation detail) in AutoCAD for S&W to modify for bridge and riverbank erosion and scour design plan and details.
5. Bridge hydraulics design assumes that the WSDOT and FHWA design manuals will be followed and that the WDFW Water Crossing Design Guidelines will be checked and met for the velocity ratio criteria. A full reach analysis, as described in the WDFW guidelines, will not be performed. A summary of existing studies will be provided and compared with the WSDOT, FHWA design manuals and WDFW guidelines.
6. FEMA floodplain map revisions, CLOMR/LOMR applications and remapping are not included in this scope of services and can be provided upon request from the COUNTY
7. Preliminary designs and the resulting final designs are limited to those types of designs identified above. Use or selection of different design methods and features require changes in scope and budget.
8. The SUBCONSULTANT will provide design plans and details in AutoCAD format, to which the CONSULTANT will incorporate the design plans and details into the final plans and specifications. The SUBCONSULTANT will provide professional stamps on reports and letters submitted to the CONSULTANT. The CONSULTANT will stamp and sign the final plans which include SUBCONSULTANT designs, and by reference professional stamps included in the supporting reports and design memoranda.

TASK 5 PERMITTING SUPPORT (PHASE 1 & 2)

Overall assumptions:

- The COUNTY will perform environmental documentation and permit applications. Documentation prepared to date will be provided to the CONSULTANT at the start of the project.
- Compensatory mitigation and/or mitigation plan required by regulatory agencies will be performed by the COUNTY.

Task 5.1 Agency Coordination (Phase 1)

The project is subject to review under a number of environmental policies and permitting requirements which have been identified by the COUNTY. The goal is to address the environmental effects of the project thoroughly, including mitigation to reduce or minimize impacts to a less than significant level.

To assist the COUNTY, the CONSULTANT will review the environmental commitments and permitting strategy that documents key issues and environmental constraints relating to obtaining the required permits for the proposed bridge structure.

Two meetings are planned for the proposed bridge design with representatives of the COUNTY, Washington Department of Fish & Wildlife (WDFW), US Forest Service, and Washington State Department of Transportation (WSDOT) Local Programs.

1. The first meeting will be conducted early in the preliminary stage of the project to present engineering constraints for likely bridge alternatives, and set the stage for a site visit. The meeting will review the likely designs and gain agency understanding and commitments for permitting, including confirmation by the agencies of any anticipated permit exemptions.
2. The second meeting will be conducted after the conceptual bridge designs have been developed to a point where sufficient information about the design features of the proposed bridge alternatives and potential impacts can be described.

The CONSULTANT will coordinate and facilitate the meetings, develop appropriate graphic and presentation materials, and prepare a written summary for each. The CONSULTANT will also be available for a recommended field visit to the bridge site with regulatory agency staff. It is expected that the bridge site visit will take place after the first of the agency meetings is conducted.

Assumptions

- The COUNTY will provide a complete record of communications with regulatory agencies concerning the proposed bridge.

- The agency review meetings will be held at COUNTY offices in Everett, and the COUNTY will make a suitable conference room available.

Deliverables

- Agendas for agency meetings
- Attendance at two 2-hour agency review meeting by three CONSULTANT staff members
- Summary notes for agency meetings
- Bridge site visit with regulatory agency staff by two CONSULTANT staff members

Task 5.2 Design Data for Permit Documents (Phase 1 & 2)

The CONSULTANT will support the project by providing technical design data (quantities, measured impact areas, etc.) required for the bridge and other specific project elements designed by the CONSULTANT. The evaluation will include the project footprint and other areas that could be used during construction, including temporary structures that may be required for access during construction.

Deliverables

- Preliminary design input and review during Phase 1 for JARPA, SEPA, and HPA.
- Final design input and review during Phase 2 for JARPA, SEPA, and HPA.

TASK 6 BRIDGE STRUCTURE STUDY (PHASE 1)

The purpose of this design task is to perform an abbreviated type, size and location (TS&L) study to select a preferred bridge alternative to span the wetland area at the north end of the project. The 60% plans currently show a 180 foot long structure centered at STA 55+00.

Initially the CONSULTANT bridge design and construction staff will visit the bridge project site for familiarization and documentation of existing site conditions. A thorough review of the geotechnical study will be performed to ensure that the required information needed for the bridge design has been addressed. This includes the following.

a. Presence and impacts to new bridge construction of existing scour-susceptible, compressible, liquefiable or settlement-prone soils observed in our explorations.

b. Foundation type and depth; service, strength and seismic capacities; bearing elevations at each pier; and anticipated settlements of foundation elements for the new bridge.

c. Geotechnical design criteria for the bridge, including seismic design requirements and liquefaction hazard analysis, and lateral earth pressures.

d. Recommendations for bridge abutment or approach fills, including settlement estimation.

e. Bridge interface with debris diversion berm.

f. Bridge constructability issues and concerns.

Three (3) different bridge types (material/span arrangement) will be evaluated for the proposed bridge structure. The final bridge types to be evaluated for the study will be determined through consultation with the COUNTY. However, at this time the likely candidate bridge types include: (1) a single-span steel plate girder bridge, (2) a single-span steel truss bridge, and (3) a single-span precast concrete girder bridge.

For the bridge types identified for the study, all components of the superstructure, substructure, and foundation will be evaluated with criteria agreed upon with the COUNTY to establish the associated pros and cons for each. The criteria will include:

- Feasibility of construction
- Sustainability
- Environmental impacts
- Aesthetics
- Cost

It is assumed that concept level drawings or sketches will be developed as required to adequately describe the preferred bridge type and location and will include typical cross section, foundation layout, and construction sequence and schedule to be included in the study memo deliverable document. Other bridge assumptions include the following.

1. The new bridge foundations are assumed to be supported on drilled shafts or driven piles.
2. The need for bridge approach slabs will be determined during the bridge study.

A meeting to present and discuss the bridge study alternatives with the COUNTY and regulatory agencies is discussed under Task 5.1.

In consultation with the COUNTY, a preferred bridge alternative will be selected based on evaluation of the agreed upon weighted criteria.

Deliverables

A draft and final memo report summarizing the results of preliminary bridge engineering and study recommendations will be submitted as a Bridge Structure Selection Memo. The final memo report will be stamped by a structural engineer that is licensed in the State of Washington.

- Draft and final Bridge Structure Selection Memo

TASK 7 BRIDGE - PLANS, SPECIFICATIONS AND ESTIMATES / PS&E (PHASE 2)

The CONSULTANT will prepare the PS&E and project-specific special provisions for the project's proposed bridge structure. Any temporary bridge or other structures required for construction of the proposed bridge will be developed conceptually with required width, length, alignment and flood clearance shown on the plans. Two site visits by up to three CONSULTANT staff, each visit is assumed during Phase 2 to support the final bridge design and bid document preparation.

Task 7.1 Bridge Design and Drawings

- ***Substructure Design Calculations*** – Calculations will be completed and designs will be prepared for the abutments, columns, crossbeams, and foundations based on the controlling forces from the static and seismic analyses.
- ***Superstructure Design Calculations*** - Calculations will be completed and designs will be prepared for the superstructure components of the preferred alternative determined at the conclusion of the Bridge Structure Study described in Task 6.
- ***Bridge Drawings*** - The CONSULTANT will complete the final contract drawings indicated in the list of bridge drawings provided in the attached fee estimate, Exhibit E.
- ***Bridge Specifications*** - Current WSDOT Standard Specifications for Road, Bridge, and Municipal Construction will be the standard specifications for the work. The CONSULTANT will prepare the project specific special provisions required for construction of the bridge.
- ***Bridge Quantities and Construction Cost Estimate*** - A list of bid items will be prepared, conforming as much as possible to the WSDOT standard item table. Every bid item will have a description, measurement unit, and payment description in the specifications. Quantities and unit prices will be estimated for every bid item. Unit prices will be estimated from recent bid experience with similar projects, WSDOT unit bid analysis, contractor inquiries, and Means construction estimating manuals.

Task 7.2 Bridge Design Submittals

The planned submittal deliverables for the bridge design are as follows.

- ***Draft Permitting Submittal*** - This submittal will provide all design information required to complete all permit applications. This submittal is typically referred to as 30 percent submittal, but the percent complete of various aspects of the projects design will be more or less than 30 percent, as required, to meet the objective of the submittal. This submittal establishes the overall design layout, footprint, geometrics of the project, phasing, and establishes the improvements necessary to make informed decisions regarding property needed and easements—both permanent and temporary—and to generate construction details necessary to prepare a construction contract (one half-size set of plans

and the construction cost estimate). For the bridge design, this submittal is expected to be comprised largely of exhibits and information prepared under Task 6.

- ***Final Permitting Submittal*** - Because all remaining design work will be based upon the project decision represented in this submittal and future changes to these decisions can impact design costs and project delivery schedule, the draft permitting submittal will be revised and resubmitted to the COUNTY for review and approval, if necessary (one half-size set of plans, an outline of the special provisions, and the construction cost estimate). This submittal is typically referred to as a 60 percent submittal and will bring the bridge design portion of the project to a similar completion level as the roadway and other project elements.
- ***Intermediate / 90 Percent Submittal*** - This submittal will have all important details needed to construct the project, identify all anticipated pay items, and provide outline specifications (one half-size set of plans, construction cost estimate, and project special provisions). The 90 percent submittal will conform to the WSDOT Deliverables Expectation Matrix for bridge projects at Intermediate PS&E Submittal Review.
- ***100 Percent Submittal*** - This submittal will represent a complete draft of the construction contract (one half-size set of plans, construction cost estimate, and project special provisions). The 100 percent submittal will conform to the WSDOT Deliverables Expectation Matrix for bridge projects at PS&E Presubmittal Review.
- ***Ad Ready Submittal*** - This submittal will incorporate COUNTY comments on the 100 percent submittal and is intended for the Ad (one half-size and one full-size set of plans and one AutoCAD CD, construction cost estimate, and project special provisions). The Ad ready submittal will conform to the WSDOT Deliverables Expectation Matrix for bridge projects at Final PS&E Review Process.

Task 7.3 Anticipated Design Schedule

The attached preliminary project schedule describes the target dates for the design phases and support during bidding.

TASK 8 IDENTIFIED PROJECT ELEMENTS - PLANS, SPECIFICATIONS AND ESTIMATES / PS&E (PHASE 2)

Task 8.1 Design and Drawings

Working together with the SUBCONSULTANT, the CONSULTANT will prepare the PS&E for the following identified project elements and as included in the current set of preliminary 60 Percent Submittal plans prepared by the COUNTY:

1. Walls and Slopes
2. Large Boulders and Rock Outcrops
3. Debris Diversion Berm
4. Armored Crossing
5. Rock Fall Mitigation Systems
6. Bridge Scour and Riverbank Protection

Drawings will be produced by the CONSULTANT with details and other design input from the SUBCONSULTANT as described under Task 3.3 and Task 4.3. The profile and alignment of the roadway will be based on the COUNTY's preliminary 60 Percent Submittal plans, as modified during the course of design completion. Specifications and cost estimates for the above identified project elements will be produced by the CONSULTANT with input from the SUBCONSULTANT as described under Task 3.3 and Task 4.3. Two site visits by up to three CONSULTANT staff each visit are assumed during Phase 2 to support the final design and bid document preparation for these identified project elements.

Task 8.1.1 Walls and Slopes

The CONSULTANT will work with the SUBCONSULTANT and the COUNTY's roadway designers to finalize the wall designs and slopes once supplemental topographic survey data is available for review of these elements as currently identified. Will include wall geometrics - profile, layout, and sections - and interface with the roadway

prism. Any culvert crossings associated with the walls and slopes will be included with these design elements. Aesthetic treatment of wall and slope faces approved by USFS during the preliminary design conducted under Task 3.2.2 effort (Phase 1) will be included in the final design details.

Task 8.1.2 Large Boulders and Rock Outcrops

The CONSULTANT will work with the SUBCONSULTANT to finalize the drawings showing the locations and extents of known large boulder and rock outcrops once supplemental topographic survey data is available and site reconnaissance is completed for these locations.

Task 8.1.3 Debris Diversion Berm

The CONSULTANT will work with the SUBCONSULTANT to finalize the debris diversion berm design once supplemental topographic survey data is available for review of this project element as currently identified. Will include berm geometrics - profile, layout, and sections - and interface with the roadway prism and bridge. Any associated stream relocation associated with the debris berm will be included with this design element.

Task 8.1.4 Armored Crossing

The CONSULTANT will work with the SUBCONSULTANT to finalize the armored crossing design once supplemental topographic survey data is available for review of this project element as currently identified. Will include armored crossing geometrics - profile, layout, and sections - and interface with the roadway prism. Any associated stream relocation and flow accommodation associated with the armored crossing will be included with this design element.

Task 8.1.5 Rockfall Mitigation Systems

The CONSULTANT will work with the SUBCONSULTANT and the COUNTY to incorporate rock fall mitigation systems in the design of the project as required. The potential for need is greatest in areas of cuts into bedrock large boulders and bouldery colluvium, versus natural rock outcrops. Potential rockfall mitigation systems include catchment ditches, catchment fences, and mesh drapes. The assessment conducted during preliminary design under Task 3.2.4 (Phase 1) and design refinement under Task 3.3.6 (Phase 2) will be included in the final design of this element.

As this project element has not been previously incorporated in the design effort for the project, an assessment will be conducted to identify locations and recommend measures that should be installed as part of this project for rockfall mitigation systems.

Task 8.1.6 Bridge Scour and Riverbank Protection

The CONSULTANT will work with the SUBCONSULTANT to incorporate comments received following submittal of the Phase 1 - conceptual plans developed under Task 4.2.5 and develop 60 percent Plans, Specifications and Estimates (PS&E) package for an internal review. After incorporating comments, the 60 percent package will be included in the Intermediate 90 percent PS&E package. The SUBCONSULTANT's involvement in this task will be to review plans, provide modifications to key bridge scour and riverbank protection details, assist with specifications, and perform final engineering calculations. The SUBCONSULTANT's portion of this design will be stamped by a professional engineer registered in the State of Washington.

Task 8.2 Design Submittals

The submittal deliverables are the same as described for the Bridge Design Submittals under Task 7.2 except that the Draft Permitting Submittal (30%) and the Final Permitting Submittal (60%) will only be provided for the following specific project elements:

1. Debris Diversion Berm
2. Armored Crossing
3. Rock Fall Mitigation Systems
4. Bridge Scour and Riverbank Protection

Task 8.3 Anticipated Design Schedule

The attached preliminary project schedule describes the target dates for the design phases and support during bidding.

TASK 9 QUALITY ASSURANCE / QUALITY CONTROL (PHASE 1, 2 & 3)

The CONSULTANT will provide quality assurance/quality control (QA/QC) for all CONSULTANT design work in accordance with the CONSULTANT's QA/QC standards.

TASK 10 SUPPORT DURING BIDDING (PHASE 3)

Under this phase, the CONSULTANT will provide the following services.

- Responding to bidders questions during the bid period
- Preparation of addendum during the bid period (2 assumed)
- Attendance at the pre-bid meeting
- Field staking for bidding support – included under Task 2.3

EXHIBIT C
Electronic Exchange of Engineering and Other Data

CONSULTANT shall provide documents, exhibits, electronic files, or other presentations to the COUNTY in the following formats upon completion of the various phases of the work:

30% DESIGN SUBMITTAL

Eleven (11) Sets	30% Review Plans (Half-size) (10 bound and 1 unbound)
One (1) Set	30% Review Plans (Full-size)
One (1) Set	30% Plans - Civil 3D Etransmit file for each drawing in the plan set or if using sheet sets an Etransmit file of the sheet set and Plan set in PDF format on CD(s)
One (1) Copy	30% Engineer's Estimate using COUNTY format (Excel and PDF)
Three (3) Copies	30% Drainage Report (2 bound and 1 unbound)
Six (6) Copies	Final Design Report (5 bound and 1 unbound) including CONSULTANT Stamp and Signature

60% DESIGN SUBMITTAL

Three (3) Copies	Utility Conflict Plan/Spreadsheet (Excel and PDF)
Eleven (11) Sets	60% Plans (Half-size) (10 bound and 1 unbound)
Two (2) Sets	60% Plans (Full-size)
One (1) Set	60% Plans - Civil 3D Etransmit file for each drawing in the plan set or if using sheet sets an Etransmit file of the sheet set and Plan set in PDF format on CD(s)
One (1) Copy	60% Engineer's Estimate using COUNTY format (Excel and PDF)
One (1) Copy	60% Special Provisions: General and project specific (Office/Word 2007 format via email attachment), each special provision shall be provided as a separate file, individually named, and sent to the COUNTY via email attachment (See "Specification Development" section below)
One (1) Copy	Summary of Quantities, marked up by hand (See "Specification Development" section below)
Three (3) Copies	60% Drainage Report (2 bound and 1 unbound)

90% DESIGN SUBMITTAL

Three (3) Copies	Documentation of Utility Conflict Resolution (Excel & PDF)
Eleven (11) Sets	90% Plans (Half-size) (10 bound and 1 unbound)
Two (2) Sets	90% Plans (Full-size)
One (1) Set	90% Plans - Civil 3D Etransmit file for each drawing in the plan set or if using sheet sets an Etransmit file of the sheet set and Plan set in PDF format on CD(s)
One (1) Copy	90% Engineer's Estimate using COUNTY format (Excel and PDF)
Three (3) Copies	Pre-Final Drainage Report (2 bound and 1 unbound)
One (1) Copy	90% Special Provisions: General and project specific (Office/Word 2007 format via email attachment), each special provision shall be provided as a separate file, individually named, and sent to the COUNTY via email attachment (See "Specification Development" section below)
One (1) Copy	Summary of Quantities, marked up by hand (See "Specification Development" section below)
Two (2) Copies	Stormwater Pollution Prevention Plan (1 bound and 1 unbound)
One (1) Copy	Comment Response (Word format)

FINAL DESIGN SUBMITTAL – including CONSULTANT Stamp and Signature

One (1) Set	Final Plans (Full-size Polypropylene)
One (1) Set	Final Plans - Civil 3D Etransmit file for each drawing in the plan set or if using sheet sets an Etransmit file of the sheet set and Plan set in PDF format on CD(s)
One (1) Copy	Final Engineer's Estimate using COUNTY format (Excel and PDF)
Three (3) Copies	Final Full Drainage Report (2 bound and 1 unbound)
One (1) Copy	Final Special Provisions: General and project specific (Office/Word 2007 format via email attachment), each special provision shall be provided as a separate file, individually named, and sent to the COUNTY via email attachment (See "Specification Development" section below)

One (1) Copy	Summary of Quantities, marked up by hand (See "Specification Development" section below)
One (1) Copy	Comment Response (Word format)

The CONSULTANT may affix digital certificates to electronic files to certify completeness and file content ownership.

At AGREEMENT closure, all calculations, written memorandums, reports and correspondences pertaining to the project development, including those of sub-consultants, shall be submitted to the COUNTY in the form of electronic files (MS Office and PDF) and hard copies that bear names and/or signatures.

STANDARD COUNTY ENGINEERING GRAPHICS PAPER SIZES

The COUNTY will require that all plans submitted be on the appropriate paper size. Depending on the purpose/use of the drawing it will require one or more of the following sizes. Please contact the project manager to ensure you have the correct paper size for your plan submittal. The following list is a guideline, the project manager may request a paper size not listed.

Full-size Plan Sheet:	22"x 34"
Half-size Plan Sheet:	11"x 17"
Record of Survey:	18"x 24"
J.A.R.P.A.:	8.5"x 11"
Legal Exhibits:	8.5"x 14"
Misc. Exhibits:	8.5"x11" or 11"x17"

SPECIFICATION DEVELOPMENT

The COUNTY's required process for Specification Development has been outlined in the Consultant Specification Development Matrix. These requirements may be periodically updated. The CONSULTANT shall be responsible to utilize the most current version when developing specifications.

The Consultant Specification Development Matrix may be downloaded at:
http://www1.co.snohomish.wa.us/Departments/Public_Works/Services/Roads/ located under "Doing Business with Public Works".

CADD STANDARDS AND AUTODESK SOFTWARE

The COUNTY intends to issue an updated version of the Public Works CADD Standards Package every January. In addition, the COUNTY may upgrade to a newer version of Autodesk civil engineering software during the term of this AGREEMENT. If this should occur and the COUNTY determines the upgrade to be a necessary requirement of this AGREEMENT, the COUNTY will notify CONSULTANT of intent to upgrade at least three (3) months prior to date when the CONSULTANT will be required to upgrade and begin using the new version.

All necessary CADD Standards files may be downloaded at:
http://www1.co.snohomish.wa.us/Departments/Public_Works/Divisions/Eng/Design_group/CADD_Standards.htm

RECORD DRAWING SUBMITTAL

The COUNTY's required Record Drawing Media Standards are outlined in Chapter 10 of the Snohomish County Engineering Design and Development Standards (EDDS). Please refer to the EDDS and use these standards when providing Record Drawings to the COUNTY. These standards may change during the life of this AGREEMENT. The CONSULTANT shall be responsible to utilize the most current version of the EDDS when Record Drawings are required.

Engineering Design and Development Standards may be downloaded at:
http://www1.co.snohomish.wa.us/Departments/Public_Works/Divisions/TES/ProgramPlanning/EDDS/

EXHIBIT D-3
Payment (Negotiated Hourly Rate)

The CONSULTANT shall be paid by the COUNTY for completed work and services rendered under this AGREEMENT as provided hereinafter. Such payment shall be full compensation for work performed or services rendered and for all labor, materials, supplies, equipment, and incidentals necessary to complete the work. The CONSULTANT shall conform to all applicable portions of 48 CFR Part 31.

1. Hourly Rates: The CONSULTANT shall be paid by the COUNTY for work done, based upon the negotiated hourly rates shown in Exhibit "E-2" and "F" attached hereto and by this reference made part of this AGREEMENT. The rates listed are the maximum rates payable under this AGREEMENT. These rates shall be applicable for the first twelve (12) month period and shall be subject to negotiation for the following twelve (12) month period upon request of the CONSULTANT or the COUNTY. If negotiations are not conducted for the second or subsequent twelve (12) month periods within ninety (90) days after completion of the previous period, the rates listed in this AGREEMENT, or subsequent written authorization(s) from the COUNTY shall be utilized. The rates are inclusive of direct salaries, payroll additives, overhead, and fee. The CONSULTANT shall maintain support data to verify the hours billed on the AGREEMENT.

2. Direct Non-Salary Costs: Direct Non-Salary Costs will be reimbursed at the Actual Cost to the CONSULTANT with no mark-up. These charges may include, but are not limited to, the following items: travel, printing, supplies, and sub-consultant costs.

    a. Air, train travel or rental car costs (if applicable) shall be reimbursed only to economy class levels unless otherwise approved by the COUNTY. The CONSULTANT shall comply with the rules and regulations regarding travel costs (excluding air, train, and rental car costs) in accordance with the COUNTY'S Travel Rules and Procedures. However, air, train, and rental car costs shall be reimbursed in accordance with 48 CFR Part 31.205-46 "Travel Costs."

    b. The billing for Direct Non-Salary Costs shall include an itemized listing of the charges directly identifiable with the PROJECT.

    c. The CONSULTANT shall maintain the original supporting documents in CONSULTANT's office. Copies of the original supporting documents shall be supplied to the COUNTY upon request.

    d. All above charges must be necessary for the services provided under this AGREEMENT.

3. Management Reserve Fund: The COUNTY may desire to establish a Management Reserve Fund to provide the Agreement Administrator with the flexibility to authorize additional funds to the AGREEMENT for allowable unforeseen costs, or reimbursing the CONSULTANT for additional work beyond that already defined in this AGREEMENT. Such authorization(s) shall be in writing and shall not exceed the lesser of $100,000 or 10% of the Total Amount Authorized as shown in the heading of this AGREEMENT. The amount included for the Management Reserve Fund is shown in the heading of this AGREEMENT. This fund may not be replenished. Any changes requiring additional costs in excess of the Management Reserve Fund shall be made in accordance with Section XIV, "Extra Work."

4. Maximum Total Amount Payable: The Maximum Total Amount Payable by the COUNTY to the CONSULTANT under this AGREEMENT shall not exceed the amount shown in the heading of this AGREEMENT. The Maximum Total Amount Payable is comprised of the Total Amount Authorized, and the Management Reserve Fund. The Maximum Total Amount Payable does not include payment for Extra Work as stipulated in Section XIV, "Extra Work". No minimum amount payable is guaranteed under this AGREEMENT.

5. Monthly Progress Payments: Progress payments may be claimed on a monthly basis for all costs authorized in 1 and 2 above. Monthly billings shall be in a format approved by the County (see example, Exhibit "N-2") and accompanied by monthly progress reports in a format approved by the County (see example, Exhibit "N-3"). The monthly billings shall be supported by detailed statements for

hours expended at the rates established in Exhibit "E-2", including names and classifications of all employees, and billings for all direct non-salary expenses. CONSULTANT invoices must be received by the COUNTY no later than ninety (90) days following completion of work performed by the CONSULTANT to be eligible for payment. Invoices received by the COUNTY after that time may be paid at the sole discretion of the COUNTY.

To provide a means of verifying the billed salary costs for the CONSULTANT'S employees, the COUNTY may conduct employee interviews. These interviews may consist of recording the names, titles, salary rates, and present duties of those employees performing work on the PROJECT at the time of the interview.

6. Final Payment: Final Payment of any balance due the CONSULTANT of the gross amount earned will be made promptly upon its verification by the COUNTY after the completion of the work under this AGREEMENT, contingent upon receipt of all PS&E, plans, maps, notes, reports, electronic data and other related documents which are required to be furnished under this AGREEMENT. Acceptance of such Final Payment by the CONSULTANT shall constitute a release of all claims for payment, which the CONSULTANT may have against the COUNTY unless such claims are specifically reserved in writing and transmitted to the COUNTY by the CONSULTANT prior to its acceptance. Said Final Payment shall not, however, be a bar to any claims the COUNTY may have against the CONSULTANT or to any remedies the COUNTY may pursue with respect to such claims.

   The payment of any billing shall not constitute agreement as to the appropriateness of any item and at the time of final audit, all required adjustments will be made and reflected in a final payment. In the event such final audit reveals an overpayment to the CONSULTANT, the CONSULTANT shall refund such overpayment to the COUNTY within thirty (30) days of notice of the overpayment. Such refund shall not constitute a waiver by the CONSULTANT for any claims relating to the validity of a finding by the COUNTY of overpayment. The CONSULTANT has twenty (20) days after receipt of Final POST AUDIT to begin the appeal process to the COUNTY for audit findings.

7. Inspection of Cost Records: The CONSULTANT and its sub-consultants shall keep available for inspection by representatives of the COUNTY, STATE and the United States, for a period of three (3) years after receipt of final payment, the cost records and accounts pertaining to this AGREEMENT and all items related to or bearing upon these records with the following exception: if any litigation, claim or audit arising out of, in connection with, or related to this AGREEMENT is initiated before the expiration of the three (3) year period, the cost records and accounts shall be retained until such litigation, claim, or audit involving the records is completed.

EXHIBIT E-1
Consultant Fee Determination – Budget

EXHIBIT E-1, PROJECT FEE DETERMINATION — Total Costs
BergerABAM — 6/18/2013

Index-Galena Road MP 6.4 to 6.9 Realignment
Snohomish County - RC 1532 / UP1 #06-0150

BergerABAM PERSONNEL

	Project Function	Hours		Blended Billing Rate		Cost
1	Officer / Managing Principal	578	X	$ 190.93	= $	110,359
2	Bridge Lead / Constr. Specialist	512	X	$ 172.29	= $	88,210
3	Project Engineer	964	X	$ 133.17	= $	128,378
4	Structural Engineer	1,106	X	$ 99.36	= $	109,891
5	Civil Engineer	460	X	$ 114.24	= $	52,552
6	Designer/CAD Operator/Graphics	1,211	X	$ 98.46	= $	119,233
7	Coordinator /Administration	178	X	$ 82.18	= $	14,628
8	Survey Manager	60	X	$ 119.56	= $	7,174
9	Project Surveyor 4	166	X	$ 96.71	= $	16,054
10	Chief of Parties	508	X	$ 82.37	= $	41,844
11	Survey Crew Chief 4	172	X	$ 70.46	= $	12,119
12	Survey Technician 4	660	X	$ 66.32	= $	43,769
13	Survey Technician 3	204	X	$ 60.79	= $	12,401
	BergerABAM Hours, TOTAL	6,779		Subtotal Personnel Costs =	$	756,614
				Salary Escalation for FY 2013 at = 3.00%	$	22,698
				TOTAL PERSONNEL COSTS =	$	779,313

DIRECT NONSALARY COSTS (DNSC)

Mileage	3,200	miles @	$ 0.565	$	1,808
Federal Express / Courier	6	each @	$ 15.00	$	90
Task 2 - Surveying Reimbursable Expenses				$	12,557
			TOTAL REIMBURSABLE EXPENSES (DNSC) =	$	14,455

TOTAL BergerABAM FEE = $ 793,767

SUBCONSULTANTS

Shannon & Wilson - Geotechnical & Hydraulic Engineering	$	343,873
	$	-
TOTAL SUBCONSULTANT FEES =	$	343,873

TOTAL AUTHORIZED AMOUNT = $1,137,640

MANAGEMENT RESERVE

TO BE INCLUDED BY SNOHOMISH COUNTY	$	-
TOTAL CONTRACT AMOUNT =	$	1,137,640

Prepared by: SKJ
Date: 18 Jun 2013

EXHIBIT E-1: PROJECT FEE DETERMINATION 6/18/2013
BergerABAM

Index-Galena Road MP 6.4 to 6.9 Realignment
Snohomish County - RC 1532 / UPI #06-0150

BergerABAM COST TOTALS by TASK

		Total Hours	Expenses	Task Totals
Task 1	Project Management	576	$ 708	$ 83,332
Task 2	Survey and Base Mapping	1,770	$ 12,557	$ 133,362
Task 5	Permitting Support	226	$ 226	$ 31,109
Task 6	Bridge Structure Study	468	$ 170	$ 58,970
Task 7	Bridge - PS&E	1,553	$ 313	$ 175,356
Task 8	Identified Project Elements - PS&E	1,599	$ 313	$ 189,743
Task 9	Quality Assurance / Quality Control	440	$ -	$ 65,242
Task 10	Support During Bidding	147	$ 170	$ 19,500
				$ 756,614

Total BergerABAM Hours	6,779
Total BergerABAM Expenses	$ 14,455

Personnel Costs =	$	756,614
3% Salary Escalation (SE) for Design =	$	22,698
TOTAL PERSONNEL COSTS =	$	779,313

DIRECT NONSALARY COSTS (DNSC)

TOTAL REIMBURSABLE EXPENSES (DNSC) =	$	14,455

TOTAL BergerABAM FEE (DSC + SE + OH + FF + DNSC) =	$	793,767

SUBCONSULTANT COST TOTALS by TASK

Task 3	Geotechnical Engineering - Shannon & Wilson	$	192,729
Task 4	Hydraulic Engineering - Shannon & Wilson	$	151,144
	TOTAL SUBCONSULTANT FEES =	$	343,873
	TOTAL AUTHORIZED AMOUNT =	$	1,137,640

MANAGEMENT RESERVE

TO BE INCLUDED BY SNOHOMISH COUNTY	0%	$	-

TOTAL CONTRACT AMOUNT =	$	1,137,640

EXHIBIT E-1, PROJECT FEE DETERMINATION
BergerABAM

BA Labor Rates
6/18/2013

Index-Galena Road MP 6.4 to 6.9 Realignment
Snohomish County - RC 1532 / UPI #06-0150

Project Function	Employee	Contract Position Classification (1)	FY 2012 Direct Salary Rate	Estimated Participation %	FY2012 Blended Billing Rate (2)
Officer / Managing Principal	Bob Fernandes	Engineer IX	$79.33	5%	
	Sue Johnson	Engineer VIII	$68.56	95%	
					$190.93
Bridge Lead / Construction Specialist	Chuck Spry	Engineer VIII	$69.11	60%	
	Bob Lee	Senior Construction Specialist	$52.21	40%	
					$172.29
Project Engineer	Greg Banks	Engineer VI	$46.67	75%	
	Steven True	Engineer VII	$55.77	25%	
					$133.17
Structural Engineer	Bill Sandbo	Engineer IV	$35.94	95%	
	Santiago Aguilar	Engineer V	$38.30	5%	
					$99.36
Civil Engineer	Shawna Lawrence	Engineer V	$42.91	60%	
	Naomi Selove	Engineer V	$39.78	60%	
					$114.24
Designer / CAD Operator / Graphics	Jef Blake	Applications Programmer II	$48.97	5%	
	John Reyes	Designer IV	$35.22	45%	
	Lee Childress	Designer IV	$34.86	45%	
	Aaron Savage	Graphics	$34.95	5%	
					$98.46
Coordinator / Administration	Kelly Robinson	Department Coordinator	$29.82	75%	
	Nora Bretana	Administration	$30.10	25%	
					$82.18

NOTES:

(1) See Exhibit E-2 for all Contract Position Classifications and maximum allowable rates.

(2) Blended Billing Rate is used for estimating purposes only and includes contract Overhead (OH) & Fixed Fee (FF) rates. **Effective DSC Multiplier =** **2.7632**
Billing Rates invoiced shall be based on employee direct salary rate and shall not exceed those from Exhibit E-2.

(3) Billing rates for BergerABAM surveying staff appear separately.

EXHIBIT E-1: PROJECT FEE DETERMINATION
Berger/ABAM

02/05/2013

TASK DESCRIPTION	Task Number	Officer / Managing Principal	Bridge Lead / Construction Specialist	Project Engineer	Structural Engineer	Civil Engineer	Designer / CAD Operator / Graphics	Coordinator / Administration	Totals
BLENDED BILLING RATE ==>		$180.93	$172.29	$133.17	$99.34	$114.24	$95.48	$82.18	
TASK 1 - PROJECT MANAGEMENT	1	216	52	108	56	32	20	92	576
Project Coordination	1.1	96						48	144
Progress Meetings	1.2	64	24	48	16	16			168
Management of Subconsultants	1.3	24	8	24	24			16	96
Project Demobilizations & Restarts (2)	1.4	24	16	24	16	16	8	24	128
Project Closeout	1.5	8	4	12			12	4	40
		$41,242	$8,959	$14,383	$5,564	$3,656	$1,963	$7,560	$83,332
TASK 2 - SURVEY AND BASE MAPPING	2	See Sheet 9		Berger ABAM					
TASK 3 - GEOTECHNICAL ENGINEERING	3	See Sheet 11		Shannon & Wilson					
TASK 4 - HYDRAULIC ENGINEERING	4	See Sheet 13		Shannon & Wilson					
TASK 5 - PERMITTING SUPPORT	5	52	24	54	28	28	36	4	226
Agency Coordination	5.1	44	24	40			8	4	120
Environmental Document Review		8	4	4				4	20
Meeting 1 - Bridge Concepts & Contraints		8	8	8			4		22
Bridge Site Visit w/ Agency Staff		8		8					16
Meeting 2 - Bridge Study Alternatives Review		8	8	8			4		22
Additional Coordination & Consultation		16	8	16					40
Design Data for Permit Documents	5.2	8		14	28	28	28		106
Preliminary Input @ 30% Design		2		4	8	8	8		30
Refined Input @ 60% Design		2		4	8	8	8		30
Final Input @ 90% Design		2		4	8	8	8		30
Input for Final Permits @ 100% Design		2		2	4	4	4		16
		$9,329	$4,135	$7,191	$2,782	$3,199	$3,545	$329	$31,109
TASK 6 - BRIDGE STRUCTURE STUDY	6	54	42	138	168		36	30	468
Preliminary									
Bridge Site Visit			8	8	8				24
Review Geotech Recommendations		2	2	4	8				16
Geotechnical Coordination		4	2	8	8				22
Hydraulic & Scour Coordination		4	2	8	8				22
Develop Concepts & Screen w/ County		8	8	8	16		16		56
Study Alternatives & Evaluation									
Alternative 1 - Analysis & Evaluation		2	4	16	32				54
Alternative 2 - Analysis & Evaluation		2	4	16	32				54
Alternative 3 - Analysis & Evaluation		2	4	16	32				54
Preferred Alternative - Selection & Meeting		8	2	8	8			2	24
Reporting									
Draft Memorandum		8	2	16	24		16	4	70
Review and Respond to Comments		8	2	16					26
Final Memorandum		8	2	16	12		4	4	46
		$10,310	$7,236	$18,378	$16,680		$3,545	$822	$56,970

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EXHIBIT E-1: PROJECT FEE DETERMINATION
Berger/ABAM

TASK DESCRIPTION	Task Number	Officer / Managing Principal	Bridge Lead / Construction Specialist	Project Engineer	Structural Engineer	Civil Engineer	Designer / CAD Operator / Graphics	Coordinator / Administration	Totals
BLENDED BILLING RATE ==>		$188.93	$172.29	$138.17	$99.36	$114.24	$93.48	$82.18	
TASK 7 - BRIDGE - PS&E	7	32	131	282	576		502	30	1,553
Bridge Design and Drawings	7.1	22	111	264	528		458	20	1,403
Bridge Site Visits w/ Project Team		8	16	16	8				48
Component Design Calculations		2	16	40	80				138
Bridge Drawings (see below)			43	150	384		472		1,049
Specifications		4	16	16	24			20	80
Bridge Quantities and Cost Estimate		4	8	16	24		16		68
Construction Schedule		4	12	16	8				40
Bridge Design Submittals	7.2	10	20	22	48		14	10	150
Draft Permitting Submittal (30% PS&E)		2	4	8	12		4	2	32
Final Permitting Submittal (60% PS&E)		2	4	8	12		4	2	32
Intermediate / 90% PS&E Submittal		2	4	4	8		2	2	22
100% PS&E Submittal		2	4	4	8		2	2	22
Ad Ready Submittal		2	4	4	8		2	2	22
		$6,110	$22,563	$37,555	$57,231		$49,426	$2,465	$175,356

TASK 7.1 - BRIDGE DRAWINGS

1	Bridge Plan & Elevation		2	8	12	16	38
2	Structural Notes		2	4	8	12	26
3	Construction Sequence		2	8	12	16	38
4	Foundation Layout		1	4	8	12	25
5	Drilled Shaft Details - Sheet 1		1	8	12	16	35
6	Drilled Shaft Details - Sheet 2		1	8	12	16	35
7	Miscellaneous Foundation Details		1	4	8	12	25
8	Pier 1 Abutment - Geometry		1	4	12	16	33
9	Pier 1 Abutment - Details - Sheet 1		1	4	16	16	37
10	Pier 1 Abutment - Details - Sheet 2		1	4	16	16	37
11	Pier 2 Abutment - Geometry		1	4	12	16	33
12	Pier 2 Abutment - Details - Sheet 1		1	4	16	16	37
13	Pier 2 Abutment - Details - Sheet 2		1	4	16	16	37
14	Curtain Wall Details		1	4	8	8	21
15	Girder Stop Details			2	8	8	18
16	Miscellaneous Pier Details		1	2	8	8	19
17	Bearing Details		1	2	8	12	25
18	Typical Cross Section		2	4	12	12	30
19	Framing Plan		1	4	16	12	33
20	Girder Details - Sheet 1		2	4	12	16	34
21	Girder Details - Sheet 2		2	4	12	16	34
22	Girder Details - Sheet 3		2	4	12	16	34
23	Girder Details - Sheet 4		2	4	12	16	34
24	Intermediate Diaphragm Details		2	4	12	16	34
25	End Diaphragm Details		2	4	12	16	34
26	Deck Reinforcing Details - Sheet 1		1	4	12	16	33
27	Deck Reinforcing Details - Sheet 2		1	4	12	16	33
28	Deck Reinforcing Section		2	8	8	16	34
29	Expansion Joint Details		1	4	8	8	21
30	Traffic Barrier - Sheet 1			2	8	8	18
31	Traffic Barrier - Sheet 2			2	4	8	14
32	Traffic Barrier - Sheet 3			2	4	8	14
33	Work Bridge - Plan Layout & Elevation		2	8	16	16	42
34	Work Bridge - Details		1	8	16	16	41
35	Bar List & Bending Sheet		1	2	4	8	15
	SUBTOTAL PS&E BRIDGE DRAWINGS		43	150	384	472	1,049

EXHIBIT E-1: PROJECT FEE DETERMINATION
BergerABAM

5/18/2013

TASK DESCRIPTION	Task Number	Officer / Managing Principal	Bridge Lead / Construction Specialist	Project Engineer	Structural Engineer	Civil Engineer	Designer / CAD Operator / Graphics	Coordinator / Administration	Totals
BLENDED BILLING RATE ==>		$190.93	$172.29	$133.17	$99.36	$114.24	$98.48	$82.16	
TASK 8 - PROJECT ELMENTS - PS&E	8	104	117	252	186	244	578	18	1,599
Design and Drawings	8.1	84	87	232	186	304	565	8	1,489
Site Visits w/ Project Team		16	16	16					48
Geometric Configuration Review		4	8	16		16	4		48
Project Element Design		4	12	24		40	8		88
Project Element Drawings (See Below)		59	33	180	186	212	548		1,197
Specifications		4	8	4		12		8	36
Quantities and Cost Estimate		4	8	8		16	8		44
Construction Schedule		4	12	4		8			28
Design Submittals	8.2	10	20	20		40	10	10	110
Draft Permitting Submittal (30% PS&E)		2	4	4		8	2	2	22
Final Permitting Submittal (60% PS&E)		2	4	4		8	2	2	22
Intermediate / 90% PS&E Submittal		2	4	4		8	2	2	22
100% PS&E Submittal		2	4	4		8	2	2	22
Ad Ready Submittal		2	4	4		8	2	2	22
		$19,857	$20,157	$33,559	$18,481	$39,300	$56,909	$1,479	$189,743

TASK 8.1 - IDENTIFIED PROJECT ELEMENTS DRAWINGS

No.	Description	Task	Officer / Managing Principal	Bridge Lead / Construction Specialist	Project Engineer	Structural Engineer	Civil Engineer	Designer / CAD Operator / Graphics	Coordinator / Administration	Totals
	Walls and Slopes	8.1.1	21	12	84	124	98	278		583
1	Wall & Slopes - Structural Notes, Abbreviations & Symbols		2	1	2	8	2	12		27
2	Reinforced Soil Slope RSS 1 - Plan & Elevation		1		2		8	12		23
3	Reinforced Soil Slope RSS 1 - Sections & Details		1		4		8	16		29
4	Reinforced Soil Slope RSS 2 - Plan & Elevation		1		2		8	12		23
5	Reinforced Soil Slope RSS 2 - Sections & Details		1		4		8	16		29
6	Reinforced Soil Slope RSS 3 - Plan & Elevation		1		2		8	12		23
7	Reinforced Soil Slope RSS 3 - Sections & Details		1		4		8	16		29
8	Reinforced Soil Slope RSS 4 - Plan & Elevation		1		2		8	12		23
9	Reinforced Soil Slope RSS 4 - Sections & Details		1		4		8	16		29
10	MSE Wall 1 - Plan & Elevation		1	1	4	8		12		26
11	MSE Wall 2 - Plan & Elevation		1	1	4	8		12		26
12	MSE Walls Sections & Details - Sheet 1		1	1	4	8		12		26
13	MSE Walls Sections & Details - Sheet 2		1	1	4	8		12		26
14	Solder Pile Wall 1 Plan Layout		1	1	6	12		16		36
15	Solder Pile Wall 1 Elevation & Schedule - Sheet 1		1	1	6	12		16		36
16	Solder Pile Wall 1 Elevation & Schedule - Sheet 2		1	1	6	12		16		36
17	Solder Pile Wall 2 Plan Layout		1	1	6	12		16		36
18	Solder Pile Wall 2 Elevation & Schedule		1	1	6	12		16		36
19	Solder Pile Walls Section & Details - Sheet 1		1	1	6	12		12		32
20	Solder Pile Walls Section & Details - Sheet 2		1	1	6	12		12		32
	Large Boulders & Rock Outcrops	8.1.2	4	6	10	6	20	36		82
21	Boulder/Rock Areas Notes, Abbreviations & Symbols		2	2	2	2	4	12		24
22	Boulder/Rock Areas Typical Sections & Details - Sheet 1		1	2	4	2	8	12		29
23	Boulder/Rock Areas Typical Sections & Details - Sheet 2		1	2	4	2	8	12		29
	Debris Diversion Berm	8.1.3	5	2	12		32	32		83
24	Debris Diversion Berm Plan - Geometric Layout		2	1	4		8	8		23
25	Debris Diversion Berm Grading		1	1	4		8	8		22
26	Debris Diversion Berm Sections		1		2		8	8		19
27	Debris Diversion Berm Details		1		2		8	8		19

EXHIBIT E-1: PROJECT FEE DETERMINATION
BergerABAM

	TASK DESCRIPTION	Task Number	Officer / Managing Principal	Bridge Lead / Conservation Specialist	Project Engineer	Structural Engineer	Civil Engineer	Designer / CAD Operator / Graphics	Coordinator / Administration	Totals
	BLENDED BILLING RATE ==>		$180.95	$172.29	$153.17	$96.38	$114.24	$96.48	$82.18	
	Armored Crossing	8.1.4	6	4	24	48	36	60		182
29	Structural Notes, Abbreviations & Symbols		2	1	2	6	2	12		27
29	Armored Crossing - Geometric Layout		2	1	4		6	12		27
30	Armored Crossing - Plan & Profile		1		4		8	12		25
31	Armored Crossing - Elevations		1		2		6	6		15
32	Armored Crossing - Sections		1		4	6		12		25
33	Armored Crossing Details - Sheet 1		1	1	4	12		12		30
34	Armored Crossing Details - Sheet 2		1	1	4	12		12		30
	Rockfall Mitigation Systems	8.1.5	2	4	12	6	24	48		106
35	Notes, Abbreviations & Symbols		2	2	2	2	6	12		26
36	Rock Fall Mitigation Systems - Typical Sections & Details		2	2	4	4	6	12		32
37	Rock Fall Mitigation Area 1 - Plan & Elevation		1		2		4	6		13
38	Rock Fall Mitigation Area 2 - Plan & Elevation		1		2		4	6		13
39	Rock Fall Mitigation Area 3 - Plan & Elevation		1		2		4	6		13
	Bridge Scour & Riverbank Protection	8.1.6	12	6	18	12	42	78		161
40	Notes, Abbreviations & Symbols		2	1	2	2	6	12		27
41	Bridge Scour Protection - Plan & Elevation		2		2		4	6		16
42	Bridge Scour Protection - Grading		1		2		4	6		13
43	Bridge Scour Protection - Sections		1	1	2	2	4	6		16
44	Bridge Scour Protection - Details		1	1	2	2	4	6		16
45	Riverbank Protection - Typical Sections & Details		2	1	2	2	4	6		19
46	Riverbank Protection Area 1 - Plan & Elevation		1		2		4	6		13
47	Riverbank Protection Area 2 - Plan & Elevation		1		2		4	6		13
48	Riverbank Protection Areas - Misc. Details		1	1	2	2	4	6		16
	SUBTOTAL PS&E PROJECT ELEMENT DRAWINGS		58	33	160	156	212	548		1,167
	TASK 9 - QUALITY ASSURANCE / QUALITY CONTROL	9	100	120	100	40	40	20	20	440
			$19,095	$20,674	$13,317	$3,974	$4,570	$1,969	$1,644	$65,242
	TASK 10 - SUPPORT DURING BIDDING	10	20	26	30	32	16	15	4	147
	Prebid Meeting Attendance		8	8	8					24
	Response to Bidder Inquiries (8 assumed)		4	8	8	16	8	3		47
	Preparation of Bid Addenda (2 assumed)		2	4	8	16	8	16	4	58
	Site Visits During Bid (1 assumed)		8	8	6					24
			$3,619	$4,479	$3,066	$3,178	$1,828	$1,871	$329	$19,500
	BergerABAM TOTAL HOURS =		578	512	964	1106	480	1211	178	5,009

DIRECT NONSALARY COSTS (DNSC)	Qty	Unit Cost	Per		
Task 1 - Mileage for Meetings (8)	1,200	$ 0.565	/ Mile	$ 678	Task 1
Task 1 - Federal Express / Courier	2	$ 15.00	/ Each	$ 30	Task 1
Task 5 - Mileage for Meetings (2) & Site Visits (1)	400	$ 0.565	/ Mile	$ 226	Task 5
Task 6 - Mileage for Meetings (1) & Site Visits (1)	300	$ 0.565	/ Mile	$ 170	Task 6
Task 7 - Mileage for Meetings (1) & Site Visits (2)	500	$ 0.565	/ Mile	$ 283	Task 7
Task 7 - Federal Express / Courier	2	$ 15.00	/ Each	$ 30	Task 7
Task 8 - Mileage for Meetings (1) & Site Visits (2)	500	$ 0.565	/ Mile	$ 283	Task 8
Task 8 - Federal Express / Courier	2	$ 15.00	/ Each	$ 30	Task 8
Task 10 - Mileage for Meetings (1) & Site Visits (1)	300	$ 0.565	/ Mile	$ 170	Task 10
Notes:	TOTAL REIMBURSABLE EXPENSES (DNSC) =			$ 1,898	

1. See BergerABAM Survey Cost Sheet for Task 2 DNSC.
2. See Shannon & Wilson Cost Sheets for Tasks 3 & 4 DNSC.

EXHIBIT E-1: PROJECT FEE DETERMINATION 6/18/2013
BergerABAM

Index-Galena Road MP 6.4 to 6.9 Realignment
Snohomish County - RC 1532 / UPI #06-0150

SURVEY AND BASE MAPPING - TASK 2
BergerABAM PERSONNEL

Position Classification	Hours	Billing Rate		Cost
Survey Manager	60	$ 119.56	$	7,174
Project Surveyor 4	166	$ 96.71	$	16,054
Chief of Parties	508	$ 82.37	$	41,844
Survey Crew Chief 4	172	$ 70.46	$	12,119
Survey Technician 4	660	$ 66.32	$	43,769
Survey Technician 3	204	$ 60.79	$	12,401
BergerABAM Survey Hours, TOTAL	1,770	Subtotal Personnel Costs =	$	133,362
		Salary Escalation for FY 2013 at = 3.00%	$	4,001
		TOTAL PERSONNEL COSTS =	$	137,363

DIRECT NONSALARY COSTS (DNSC)	Qty	Unit Cost	Per		
Field Supplies (Lath)	800	$ 0.55	/lath	$	440
Field Supplies (Hubs)	800	$ 0.37	/hub	$	296
Field Supplies (Flagging)	58	$ 1.33	/roll	$	77
Field Supplies (Paint)	48	$ 3.33	/can	$	160
Field Supplies (Rebar)	35	$ 1.79	/rebar	$	63
Lodging (WSDOT)	43	$ 96.00	/night	$	4,128
Per Diem (WSDOT)	86	$ 61.00	/day	$	5,246
Mileage (WSDOT)	3800	$ 0.565	/mile	$	2,147
		TOTAL REIMBURSABLE EXPENSES (DNSC) =		$	12,557

TOTAL TASK 2 BergerABAM FEE =	$	149,920

SUBCONSULTANTS

TOTAL SUBCONSULTANT FEES =	$	-
TOTAL AMOUNT FOR SURVEY =	$	149,920

TASK 2 - SURVEY AND BASE MAPPING

		Survey Manager	Project Surveyor 4	Chief of Parties	Survey Crew Chief 4	Survey Technician 4	Survey Technician 3	Total Hours per Task	Totals
	Billing Rate ==>	$ 119.56	$ 96.71	$ 82.37	$ 70.46	$ 66.12	$ 60.79		
Survey Scope	**Task 2.1 Survey and Topographic Mapping (Phase 1)**								
	Site Control Work and Verification	10	10	20		20	10	70	$ 5,744
	Culverts and Armored Crossing		8		48	48	18	122	$ 8,433
	RSS, MSE, Rock Fill Slope and Soldier Pile Walls		8	40		40	14	102	$ 7,572
	Debris Diversion Berm		8		20	20	10	58	$ 4,117
	Bridge Location Area		8	70		70	24	172	$ 12,641
	Riverbank Protection Area		4		8	8	4	24	$ 1,724
	Task 2.2 Field Staking for 90% and Timber Appraisal (Phase 2)								
	Staking for road easement lines	10	20	146		146	32	354	$ 26,784
	Centerline and cut/ fill staking		40	192		192	40	464	$ 34,648
	Task 2.3 Field Staking for RFP (Phase 3)								
	Centerline and cut/fill slope staking	10	30		96	96	32	264	$ 19,173
	Task 2.4 Additional Topographical Survey Allowance (Phase 1 & 2)	10	10	20		20	20	80	$ 6,362
	QA/QC/Meetings	20	20	20				60	$ 5,973
	Hour Totals	60	166	508	172	660	204	1,770	$ 133,362
	Percentage	3%	9%	29%	10%	37%	12%		$75/hr
	Effective DSC Multiplier =	2.7632							

EXHIBIT E-2
Consultant Fee Determination – Summary Sheet
Fee Schedule

Consultant: BergerABAM Inc.

Position Classification	Max Direct Salary Rate	Overhead @150.57%	Profit @25.75	Max Rate Per Hour
Engineer VIII/IX - Principal/Officer	$81.21	$122.28	$20.91	$224.40
Engineer VII - Project Manager	$57.22	$86.15	$14.73	$158.10
Engineer V/VI - Project Engineer	$53.00	$79.80	$13.65	$146.45
Engineer IV - Senior Engineer	$45.00	$67.76	$11.59	$124.34
Engineer I/II/III	$36.00	$54.21	$9.27	$99.48
Senior Planner	$52.00	$78.30	$13.39	$143.69
Planner	$44.30	$66.70	$11.41	$122.40
Senior Scientist/Environmental/Landscape Architect	$53.52	$80.59	$13.78	$147.90
Scientist/Environmental/Landscape Architect	$46.14	$69.48	$11.88	$127.50
Public Involvement	$40.00	$60.23	$10.30	$110.53
Applications Programmer II	$48.00	$72.27	$12.36	$132.63
CAD Operator IV/V/VI	$38.00	$57.22	$9.79	$105.00
CAD Operator II/III	$30.00	$45.17	$7.73	$82.90
Senior Construction Specialist	$55.37	$83.37	$14.26	$153.00
Construction Specialist/Inspector	$47.99	$72.26	$12.36	$132.60
Survey Manager	$48.00	$72.27	$12.36	$132.63
Surveyors	$41.00	$61.73	$10.56	$113.29
Designer I/II/III/IV	$37.00	$55.71	$9.53	$102.24
Coordinators/Graphics/Administration	$40.00	$60.23	$10.30	$110.53

The rates listed above are the maximum rates payable under this AGREEMENT. Rates invoiced shall be based on the direct salary of the individual employee and shall not exceed those listed in this Exhibit E-2.

EXHIBIT F
Breakdown of Overhead Cost

CONSULTANT'S audited overhead report from the WSDOT Audit Office, or other report supporting Overhead Rate (per Chapter 31.5 of the WSDOT Local Agency Guidelines), provided by CONSULTANT attached hereto and incorporated herein as Exhibit "F".

Washington State Department of Transportation

Lynn Peterson
Secretary of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300

360-705-7000
TTY: 1-800-833-6388
www.wsdot.wa.gov

April 22, 2013

Arnie Rusten, President/CEO
BergerABAM, Inc.
33301 Ninth Avenue South, Suite 300
Federal Way, WA 98003-2600

Re: BergerABAM, Inc. Indirect Cost Rate Schedule
Fiscal Year End May 31, 2012

Dear Mr. Rusten:

We have completed a desk review of your Indirect Cost Rate schedule for the above referenced fiscal year. Our review included the documentation provided by BergerABAM, Inc.

The reviewed data included, but was not limited to; the schedule of the indirect cost rate, a description of the company, basis of accounting and description of BergerABAM, Inc. accounting system and the basis of indirect costs.

Based on our work, we are issuing this letter of review establishing BergerABAM, Inc. Indirect Cost Rate for the fiscal year ending May 31, 2012, at 150.57% of direct labor. Costs billed to actual agreements will still be subject to audit of actual costs.

Please check with the WSDOT Consultant Services Office (HQ) and/or the WSDOT Area Consultant Liaison to determine when this reviewed rate will be applicable to your WSDOT agreement(s).

Also, when you provide next year's Indirect Cost Rate schedule to our office or to your CPA firm, please submit **either** your internally prepared *Compensation Analysis*, or the *National Compensation Matrix* (NCM) worksheet.

If you, or any representatives of BergerABAM, Inc, have any questions, please contact Martha Roach, Jeri Sivertson, or Steve McKerney at (360)705-7003.

Sincerely,

Martha Roach

Martha S. Roach
Agreement Compliance Audit Manager

MR:ds
Enclosures

cc: Steve McKerney, Director of Internal Audit
Jeri Sivertson, Assistant Director of Internal Audit
Larry Schofield, MS 47323
File

Certification of Final Indirect Costs

Firm Name: BergerABAM Inc.

Indirect Cost Rate Proposal: 155%

Date of Proposal Preparation (mm/dd/yyyy): 09/11/2012

Fiscal Period Covered (mm/dd/yyyy to mm/dd/yyyy): 06/01/2011 to 05/31/2012

I, the undersigned, certify that I have reviewed the proposal to establish final indirect cost rates for the fiscal period as specified above and to the best of my knowledge and belief:

1.) All costs included in this proposal to establish final indirect cost rates are allowable in accordance with the cost principles of the Federal Acquisition Regulations (FAR) of title 48, Code of Federal Regulations (CFR), part 31.

2.) This proposal does not include any costs which are expressly unallowable under the cost principles of the FAR of 48 CFR 31.

All known material transactions or events that have occurred affecting the firm's ownership, organization and indirect cost rates have been disclosed.

Signature: Amfinn Rusten

Name of Certifying Official* (Print): Amfinn Rusten

Title: CEO/President

Date of Certification (mm/dd/yyyy): 01/07/2013

*The "Certifying Official" must be an individual executive or financial officer of the firm at a level no lower than a Vice President or Chief Financial Officer, or equivalent, who has the authority to represent the financial information utilized to establish the indirect cost rate for use under Agency contracts.

Ref. FHWA Directive 4470.1A available on line at:
http://www.fhwa.dot.gov/legsregs/directives/orders/44701a.htm

O/H Certification; Nov 2010

BergerABAM, Inc.
Indirect Cost Rate Schedule
For the Year Ended May 31, 2012

Classification	General Ledger	Firm Adjust.	WSDOT Adj.	Ref.	Accepted Amount	%
Direct Labor Base	$13,169,869	$131,000	($5,321)	H, J, K	$13,295,548	
Indirect Salaries						
Proposal Admin Salaries	$590,767	($93,949)	($36,153)	A, J	$460,665	3.46%
Proposal/Negotiation Salaries	2,445,091	(161,925)		A	2,283,166	17.17%
Administrative Salaries	2,671,357	80,998	(79,373)	A, H, K, L, M	2,672,983	20.10%
Payroll Variance	(6,864)	(241,000)	(43,989)	H, K	(291,853)	-2.20%
Office Support Salaries	154,688				154,688	1.16%
Accounting Salaries	459,332				459,332	3.45%
Housekeeping/Stby. Salaries	3,035				3,035	0.02%
Professional Activities Salaries	126,195				126,195	0.95%
Education & Training Salaries	312,970				312,970	2.35%
Research and Development	28,162				28,162	0.21%
Computer Salary	328,058				328,058	2.47%
Total Indirect Salaries	$7,112,791	($415,875)	($159,515)		$6,537,401	49.17%
Fringe Benefits/Salary Overhead						
Incentive Compensation	$727,458		($138,093)	N	$589,365	4.43%
Vacation	1,289,770				1,289,770	9.70%
Holiday	623,393				623,393	4.69%
Sick Leave	342,080				342,080	2.57%
Other Paid Leave	29,308				29,308	0.22%
FICA	1,601,674				1,601,674	12.05%
Federal Unemployment	14,116				14,116	0.11%
State Unemployment	125,248				125,248	0.94%
Industrial Insurance	78,538				78,538	0.59%
USL&H Work Comp	65,438				65,438	0.49%
Group Insurance	1,968,185				1,968,185	14.80%
Retirement Expense	471,406				471,406	3.55%
Benefit Recovery	(6,764)				(6,764)	-0.05%
Fringe Benefit Adjustment			(92,158)	O	(92,158)	-0.69%
Total Fringe Benefits/Sal. Ovhd.	$7,329,849	$0	($230,251)		$7,099,598	53.40%
Administrative Expenses						
Travel & Subsistence	$148,859	($3,353)	($1,606)	B,F, P	$143,900	1.08%
Recruiting Fees & Expenses	18,889				18,889	0.14%
Contract Personnel	22,960				22,960	0.17%
Advertising	8,307	(8,307)		B,C	0	0.00%
Entertainment Expense	2,080	(2,080)		B,C	0	0.00%
Charitable Contributions	37,975	(37,975)		B,D	0	0.00%
Employee Welfare	286,805	(116,496)	(6,018)	B,E, Q	164,291	1.24%
Library	32,366	(1,138)		B	31,228	0.23%
Professional Activities	24,778	(4,695)		A	20,083	0.15%
Education & Training Fees	233,558		(6,459)	R	227,100	1.71%

BergerABAM, Inc.
Indirect Cost Rate Schedule
For the Year Ended May 31, 2012

Classification	General Ledger	Firm Adjust.	WSDOT Adj.	Ref.	Accepted Amount	%
General Admin	49,877	54,221	(7,615)	B,G,S	96,483	0.73%
Association Dues	84,122	(11,073)		B	73,049	0.55%
General Liability Insurance	98,432				98,432	0.74%
Legal Fees	154,214	(95,327)		B	58,887	0.44%
Accounting Fees	115,986				115,986	0.87%
Proposal Administration	272,313	(93,152)	(5,478)	B,T	173,683	1.31%
Proposal & Negotiation	4				4	0.00%
Office and Work Space	1,577,313				1,577,313	11.86%
Operating Expense	68,589				68,589	0.52%
Furniture & Small Equipment	9,498				9,498	0.07%
Furn & Small Office Depr.	343,062				343,062	2.58%
Office Equipment	9,501				9,501	0.07%
Office Supplies	101,959				101,959	0.77%
Field Equipment	37,836				37,836	0.28%
Field Equip Depreciation	31,678				31,678	0.24%
Auto Fuel & Maintenance	83,220		(5,660)	U	77,560	0.58%
Auto Insurance & License	8,166		(3,118)	U	5,048	0.04%
Auto & Truck Depreciation	43,498		(1,885)	U	41,614	0.31%
Field Equip Recovery	(84,219)				(84,219)	-0.63%
Telephone	294,346				294,346	2.21%
Postage & Freight	28,753				28,753	0.22%
Reproduction	182,283				182,283	1.37%
Personal Property Tax	19,025				19,025	0.14%
Fidelity Insurance	15,719				15,719	0.12%
Business & Prof License	36,023				36,023	0.27%
Interest Expense	2,256	(2,256)		I	(0)	0.00%
Error & Omissions Insurance	527,168				527,168	3.96%
B&O Taxes	841,532				841,532	6.33%
City and State Taxes	5,478				5,478	0.04%
Computer Expense	611,339				611,339	4.60%
Computer Depreciation	355,983				355,983	2.68%
Total Administrative Expenses	$6,741,531	($321,630)	($37,838)		$6,382,063	48.00%
Total Indirect Costs and Overhead	$21,184,170	($737,505)	($427,603)		$20,019,061	150.57%
Indirect Cost Rate	160.85%	153.72%			**150.57%**	

BergerABAM, Inc. - Reviewed & Accepted 04/22/13 LT
"Indirect Cost Rate still subject to WSDOT Audit"

BergerABAM, Inc.
Indirect Cost Rate Schedule
For the Year Ended May 31, 2012

Classification	General Ledger	Firm Adjust.	WSDOT Adj.	Ref.	Accepted Amount	%

References

BergerABAM Adjustments:

A Unallowable Proposal Admin salaries ($93,949), Proposal Negotiation Salaries ($161,925) and Administrative salaries ($22,022).

B Unallowable administrative expenses. Firm tracks unallowable expenses on the general ledger.

C Advertising unallowable per 48 CFR 31.205-1(f).

D Contributions unallowable per 48 CFR 31.205-8.

E Removed by Berger/ABAM in compliance with various FARS regulations.

F Travel and subsistence that are over the daily FAR allowable rates per 48 CFR 31.205-46

G Unallowable appreciation on stock expense per 48 CFR 31.205-6(i) ($25,829)

H Uncompensated overtime estimated adjacent per 48 CFR 37.115

I Interest and other financial costs not allowable per 48 CFR 31.205-20

WSDOT Adjustments

J Mr. Lund did not keep timesheets for June, July and August 2011. Mr. Liaghat did not submit a timesheet for August 2011. We have removed from the ICR an estimate of the labor for these months for the two employees. Direct labor adjustment of $12,821.22, and Indirect labor adjustment of $36,153.18 per 48 CFR 31.201-2(d). The labor estimate was calculated by WSDOT.

K Adjustment to account for uncompensated OT. Firm provided with a revised Uncompensated OT Tracking sheet. Direct Labor ($7,500), Admin salaries ($36,625), Payroll Variance ($43,989). 48 CFR 37.115

L Unallowable sign on bonus ($31,500), referral bonus ($20,000), and spot bonus ($3,531.49). Firm does not have a policy on spot and sign on bonus. We are unable to verify that bonus is based on employee performance, and that individual performance goals are communicated to the employees prior to work being performed, per 48 CFR 31.205-6(f), and Chapter 7.12, AASHTO Audit Guide.

M Unallowable severance payment ($60,966.34), 48 CFR 31.205-6(g), 31.201-3. Firm does not have a formal severance policy. Firm provided with a memo that established severance guidelines for Q1 FY2009, not applicable. Enhanced severance payments are not reasonable.

N Unallowable Component 1 Pool 1 Bonus ($122,500) and discretionary bonus ($15,593). We were unable to verify that bonus is awarded consistently on employee performance. Firm has a procedure in place to calculate the bonus amounts to be awarded; however, after these amounts were determined firm redistributed $15,593 of the bonus and we were not able to verify the basis for such distribution. 48 CFR 31.205-6(f) and Chapter 7.12 of the AASHTO Audit Guide.

O Fringe Benefit adjustment; directly associated cost to unallowable advertising, public relations and direct selling labor unallowable per 48 CFR 31.201-6(a)

P Unallowable tips ($86), and adjustment for firm using the incorrect POV rate of $0.555 (1,520). 48 CFR 31.205-46.

Q Unallowable tips, unsupported documentation (detailed purpose), and employee welfare expenses ($6,018) per 48 CFR 31.205-14, 31.201-2 and 31.201-4.

R Unallowable tips, unsupported documentation (detailed purpose/agenda), penalties ($6,458.52) per 48 CFR 31.205-14, 31.201-2, 31.31.205-15 and 31.201-4

S Direct project costs unallowable per 48 CFR 31.202(a) and unallowable employee photos per 48 CFR 31.201-3

T First class travel expense unallowable per 48 CFR 31.201-3, and newsletter and related postage expenses as unallowable advertising expenses per 48 CFR 31.201-3, 31.205-1, and 31.205-46. ($5,478)

U Firm did not keep mileage logs on two vehicles over a 4-month period. Adjustment to remove vehicle related expenses per 31.205-46(d), 31.205-6(a), and 31.201-2(d). Auto fuel and maintenance ($5,660), insurance ($3,118), depreciation ($1,885).

EXHIBIT G
Subcontracted Work

The County permits subcontracting for the following portions of the work of this AGREEMENT.

TASK 3 GEOTECHNICAL ENGINEERING (SUBCONSULTANT)

The SUBCONSULTANT will provide geotechnical engineering services as required to complete the design and PS&E for the construction of the Index-Galena Road Realignment between project design Mileposts 6.088 and 7.032.

The geotechnical engineering will rely on previous studies including:

- The Final Geotechnical Study prepared for the COUNTY by The SUBCONSULTANT (December 2012).
- A geotechnical site boring performed by the COUNTY near the proposed north bridge abutment near Station 57+70 (November 2012).

The SUBCONSULTANT's Final Geotechnical Study contains the results of their geotechnical studies to date to support preparation of the PS&E, including descriptions of surface and subsurface conditions, and a site plan showing boring locations and other pertinent features. Summary boring logs, charts, and graphs indicating laboratory test results are also included. The results of engineering evaluations and preliminary geotechnical engineering recommendations pertaining to the proposed bridge are also presented.

Task 3.1 Project Management

The SUBCONSULTANT will perform project management services for geotechnical engineering tasks including invoicing, scheduling of work, communications with the CONSULTANT and the COUNTY, QA/QC, and will attend three progress meetings held in coordination with the design review meetings at the CONSULTANT's offices.

Task 3.2 Preliminary Design (Phase 1)

During Phase 1, the SUBCONSULTANT will provide additional geotechnical consultation and field explorations, as needed, review the project documents as additional site survey data is available, and supplement their geotechnical study as required.

For the purposes of establishing an estimate of expected effort, the SUBCONSULTANT will provide geotechnical consultation for:

- Bridge Foundations - per Task 6 required information
- Walls and Slopes
- Large Boulder and Rock Outcrop Excavation
- Rock Fall Mitigation Systems
- Armored Crossing

Task 3.2.1 Bridge Foundations

Since the 2012 Final Geotechnical Study, the COUNTY decided to span the creek and low lying area near Sta. 55+00 with a long single span bridge instead of a bridge with multiple shorter spans. Therefore, the bridge foundation design must be reconsidered. Tasks will include:

- Provide charts of estimated axial resistance with depth for drilled shafts and driven piles
- Provide estimated lateral resistance recommendations (LPILE parameters) for drilled shafts and driven piles
- Perform drivability (WEAP) analysis for driven piles
- Provide estimated settlement of selected bridge foundation
- The CONSULTANT and SUBCONSULTANT will attend a 2 hour meeting with the COUNTY to review the bridge design Type, Size, and Location (TS&L) study.

Task 3.2.2 Walls and Slopes

The SUBCONSULTANT will provide the CONSULTANT with preliminary details and configurations for mechanically-stability earth (MSE) walls and reinforced soil slopes (RSS), including facing and drainage options. Aesthetic treatment of the wall and slope faces will be considered, including review and selection of preferred facing options by the COUNTY and US Forest Service. Depending on the results of new topographical surveys, the geometry of the proposed walls and slopes may change significantly. Changes to the wall and slope geometry may necessitate re-evaluation of the preliminary design of many or all of the proposed structures. The location and geometry of each wall and slope will be confirmed and, if necessary, redesigned. It is assumed herein that topographical revisions will result in re-evaluation of the preliminary design of 1 MSE wall, 1 soldier pile wall, and 2 RSS. Finalization of the design for all anticipated walls and slopes (i.e., 2 MSE, 2 soldier pile, and 4 RSS) is included. Tasks will include:

- Cantilever soldier pile walls (2 locations) – The two soldier pile wall locations assumed are STA 35+00 to 37+50 and STA 43+50 to 44+50.
    - Provide static lateral earth pressure design recommendations for cantilever soldier pile walls
    - Perform global stability analyses for selected soldier pile wall configurations
    - Provide soldier pile wall drainage recommendations
- Mechanically-Stabilized Earth Walls (2 locations) - The two MSE wall locations assumed are STA 14+50 to 17+50 (currently shown as RSS) and STA 45+00 to 49+00.
    - Provide static lateral earth pressures design recommendations
    - Provide bearing resistance design recommendations
    - Provide sliding resistance design recommendations
    - Perform global stability analyses
    - Perform sliding and bearing analyses
    - Provide minimum reinforcement lengths to satisfy external stability (global, sliding, bearing, and overturning stability)
    - Calculate wall settlement
    - Provide MSE wall facing recommendations
    - Provide MSE wall drainage recommendations
- Reinforced Soil Slopes (4 locations)
    - Perform global and compound stability analyses
    - Provide sliding resistance design recommendations
    - Provide minimum reinforcement lengths to satisfy external and compound stability
    - Provide reinforced soil slope facing recommendations

Task 3.2.3 Large Boulders and Rock Outcrop Excavation

A preliminary study will be performed to estimate the quantity of boulders larger than 4 feet in diameter and intact rock. The study will include counting and measuring boulders visible at the ground surface, and statistical analyses to develop distributions of boulders in the colluvial deposits. This data and statistical analyses will be used to develop boulder quantity estimates for the opinion of probable construction costs, and for the contractor bids.

The SUBCONSULTANT will develop preliminary recommendations for methods to break up large boulders and bedrock, including blasting, expansive grouts, mechanical splitters and blasting blankets.

Task 3.2.4 Rockfall Mitigation Systems

An assessment will be conducted to identify locations and recommend rockfall mitigation systems. Specific tasks will include:

- Provide conceptual details and sketches for rockfall mitigation options.

- Participate in 1 meeting with the CONSULTANT to review rockfall mitigation systems and potential locations.

Task 3.2.5 Armored Crossing

The SUBCONSULTANT will consult with the CONSULTANT regarding preliminary design elements of the proposed armored crossing. Specific tasks will include:

- Confirm orientation and location of the normal stream flow channel during field reconnaissance.
- Confirm the HEC-RAS model and estimate the mean annual flood design conditions for sizing the normal stream flow channel.
- Examine the potential for erosion and scour upstream and downstream of the armored crossing.
- Calculate design impact load from debris on the armored crossing during a debris flow event.
- Global stability of armored crossing and roadway prism during a debris flow event.

Task 3.2.6 Riverbank Scour and Erosion Protection

The SUBCONSULTANT will provide geotechnical consultation for riverbank scour and erosion protection, including partial excavation of alluvial deposits, rock backfill and installation of driven H-piles for structural reinforcement. Specific tasks will include:

- Provide check on global stability of rock backfill and roadway after scour scenario.
- Provide conceptual details and sketches for installation of driven piles.

Task 3.2.7 Field Explorations

Field explorations will include:

- Site visits with the project team to review alignment and structures.
- Field reconnaissance to mark rock outcrops and large boulders for survey and confirm orientation and location of the armored crossing normal flow channel.

Task 3.2.8 Meetings

Key project elements and findings will be discussed with the services and select stakeholders. Likely participants will include the COUNTY, USACE, WDFW, and US Forest Service. Time has been provided to attend up to two such meetings at the project site.

The CONSULTANT and SUBCONSULTANT will attend a 2 hour meeting with the COUNTY to review the bridge design Type, Size, Location (TS&L), scour design and riverbank erosion concept design plans.

Task 3.2 Assumptions

18. The proposed bridge will be founded on drilled shafts or driven piles.
19. The proposed bridge will be a single-span, approximately 180 feet long.
20. Bridge foundation axial resistance will be analyzed for no more than 2 shaft diameters and 3 pile sizes.
21. Bridge pile lateral resistance will be analyzed using LPILE parameters.
22. Drivability analysis will be analyzed for no more than 3 pile sizes and 2 hammers.
23. Bridge foundation settlement estimate will be based on only 1 condition.
24. New topographical surveys will result in significant geometry changes to walls and slopes from those assumed for the SUBCONSULTANT's Final Geotechnical Study (2012). Reanalysis of 2 soldier pile walls, 2 MSE walls and 4 reinforced soil slopes will be required. This reanalysis will be a re-check of global stability following the incorporation of additional topographic survey data to the project basemap and review of currently shown wall and slopes.
25. Earth pressures and global stability analyses for soldier pile walls will consider the static condition only.
26. Global stability analyses and sliding, bearing and overturning analyses for MSE walls will consider the static condition only.

27. Boulders larger than 4 feet in diameter are difficult to move with standard equipment and will be blasted.
28. The distribution of boulders at the ground surface is representative of boulders in colluvial deposits.
29. Rockfall mitigation systems to be considered include anchored mesh, mesh drapes, catchment fences and catchment ditches.
30. Rockfall sources include cut slopes in soil, bedrock, and broken slopes.
31. The SUBCONSULTANT will have access to the current hydraulic HEC-RAS model for the project area.
32. Design memorandum will include a draft copy in electronic format only, and 1 final paper and electronic copy.
33. The SUBCONSULTANT will attend 3 site visits with 3 attendees each.
34. Field reconnaissance will require a 2-person field crew for 2 days.

Deliverables

- Geotechnical Design Memorandum for Bridge Foundations
- Geotechnical Design Memorandum for Soldier Pile Walls
- Geotechnical Design Memorandum for MSE Walls
- Geotechnical Design Memorandum for Reinforced Soil Slopes
- Geotechnical Design Memorandum for Large Boulders and Rock Outcrop Excavation
- Geotechnical Design Memorandum for Rockfall Mitigation Systems
- Geotechnical Design Memorandum for Armored Crossing
- Geotechnical Appendix to the Hydraulic Report

Task 3.3 Final Design (Phase 2)

The SUBCONSULTANT will provide redline review and comments on the revised 60% design plans based on new survey information provided during preliminary design. The SUBCONSULTANT will provide the CONSULTANT with design calculations, drawings and layouts, details, quantities, unit costs, and other information needed to prepare the 90% and Final design plans, Summary of Geotechnical Conditions, project-specific special provisions, and engineer's opinion of probable construction cost for the following identified project elements:

6. Walls and Slopes
7. Large Boulders and Rock Outcrops
8. Debris Diversion Berm
9. Armored Crossing
10. Rock Fall Mitigation Systems

The SUBCONSULTANT will provide drawings and details in CAD format as needed for the CONSULTANT to produce the 90% and Final Plans.

Task 3.3.1 60% Design Plan Review

The SUBCONSULTANT will provide redline review and comments on the revised 60% design plans which include the additional topographic survey data in the project basemap and revised designs of the roadway, walls, slopes, and design of other elements, including the proposed bridge.

Task 3.3.2 Walls and Slopes

The SUBCONSULTANT will provide design input for reinforced soil slopes, including calculations, drawings and layouts necessary for the CONSULTANT to produce the 90% and Final design plans.

Special provisions will be prepared for driven piling, structural earth walls, geosynthetic retaining walls, soldier pile and soldier pile and tieback walls, and permanent ground anchors.

Quantities and unit prices will be estimated for bid items required for the walls and slopes. Unit prices will be estimated from recent bid experience with similar projects, WSDOT unit bid analysis, contractor inquiries, and Means construction estimating manuals.

Task 3.3.3 Large Boulders and Rock Outcrops

The SUBCONSULTANT will provide drawing details and layouts available for the CONSULTANT to prepare the final contract drawings showing the locations of known large boulder and rock outcrops. The SUBCONSULTANT will prepare the project specific special provisions required for the removal or excavation of large boulders and rock outcrops, including blasting, rock excavation, rock bolts, and other recommended methods from Task 3.2.3. Quantities and unit prices will be estimated for bid items required for the large boulders and rock outcrops. Boulder quantities will be based on the distribution estimated from the sizes of boulders visible on the ground surface.

Task 3.3.4 Debris Diversion Berm

The SUBCONSULTANT will provide design input for the debris diversion berm, including calculations and drawings necessary for the CONSULTANT to produce the 90% and Final design plans.

Quantities and unit prices will be estimated for bid items required for the debris diversion berm.

Task 3.3.5 Armored Crossing

The SUBCONSULTANT will provide design input for the armored crossing, including calculations, drawings and layouts necessary for the CONSULTANT to produce the 90% and Final design plans.

Quantities and unit prices will be estimated for bid items required for the debris diversion berm.

Task 3.3.6 Rock Fall Mitigation Systems

The SUBCONSULTANT will provide design input for the rock fall mitigation systems, including calculations, drawings and layouts necessary for the CONSULTANT to produce the 90% and Final design plans. Special provisions will be prepared for selected systems that may include mesh drapes, anchored mesh, catchment ditches and catchment fences.

Quantities and unit prices will be estimated for bid items required for the rock fall mitigation systems.

Task 3.3.7 60%, 90% Final Plan Review Meetings and Calls

The SUBCONSULTANT will attend three, two hour design review meeting for each of the revised 60%, 90% and Final Plan submittals at COUNTY offices. The SUBCONSULTANT will attend up to four, one hour conference calls for plan development and review.

Deliverables

- Design calculations, drawings and layouts, details, quantities, unit costs, and other information needed for the subtask items above to prepare the 90% and Final design plans, special provisions, Summary of Geotechnical Conditions, and construction costs.
- Summary of Geotechnical Conditions, per WSDOT

Task 3.4 Geotechnical Support During Bidding (Phase 3)

The SUBCONSULTANT will provide the following services during this phase.

- Respond to bidders' inquiries during the bid period (3 assumed)
- Preparation of addendum during the bid period (1 assumed)
- Attend the pre-bid meeting

TASK 4 HYDRAULIC ENGINEERING (SUBCONSULTANT)

The SUBCONSULTANT will provide hydraulic river engineering support for the design of the new bridge structure centered at approximate STA 55+00 and the protection of the new roadway toe of slope in areas where the toe is located adjacent to the river or within the identified channel migration zone (CMZ).

This scope of services covers data collection, hydrologic analysis, hydraulic modeling and estimating scour depths, and hydraulics design report support design of the new bridge, and revetment/riverbank and scour protection at the bridge and along the toe of slope for the new roadway.

Task 4.1 Task 4 Project Management

The SUBCONSULTANT will perform project management services for hydraulic engineering tasks including invoicing, scheduling of work, communications with the CONSULTANT and the COUNTY, QA/QC, and attendance at three progress meetings held in coordination with the design review meetings at the COUNTY offices.

Task 4.2 Field Work and Studies (Phase 1)

Task 4.2.1 Data Collection

The SUBCONSULTANT will gather existing data, flood study and hydraulic models, and previous river engineering and hydraulic studies performed on the Index Galena Road to be made available by the COUNTY. These include the current COUNTY effective HEC-RAS flood model for the North Fork Skykomish River, flood hydrology, floodplain mapping, LiDAR, bathymetric and topographic survey and surface models, aerial photos, CMZ delineation documents and shapefiles. The SUBCONSULTANT will review existing models, surfaces, hydraulics to be used for design and check for errors and consistency prior to initiating modeling efforts.

Task 4.2.2 Field Reconnaissance

The SUBCONSULTANT will conduct a two person, two day field reconnaissance to confirm current hydraulic and geomorphologic conditions and changes since the 2006 flood event, and to confirm previous river hydraulics and geomorphologic channel migration zone studies (Lochner, 2011 and Anchor, 2009). The field reconnaissance will include assessment of site conditions for developing the proposed conditions model, and limited bed material sampling using Wolman Pebble Counts in support of erosion and scour analyses.

Task 4.2.3 Existing Hydrology and Hydraulics

The COUNTY has completed flood hydrology and an updated hydraulic HEC-RAS model for the Index Galena Road realignment and bridge study reach (Nelson, 2010). The current model is based on the Anchor 2009 studies including LiDAR updates, some topographic and bathymetric survey data, and rough calibration and checking flood water surface elevations in the field. The model has since been modified by the COUNTY based on Northwest Hydraulic Consultants' comments (NHC, 2009) on the Anchor model, and is identified as the North Fork Skykomish, NF-SKY-V5.prj file (Nelson, 2010).

The SUBCONSULTANT will review the model and evaluate whether it adequately represents current site conditions. It is assumed that a limited amount of recent surveys performed by the COUNTY and current project surveys associated with this scope of services will be incorporated into the current HEC-RAS model geometry extending from 1,000 feet upstream of the proposed bridge to 1,000 feet downstream of the start of the downstream road realignment (near the Trout Creek confluence).

Task 4.2.4 Bridge Abutment and Approaches – Flooding, Erosion and Scour Estimates

For the proposed bridge, estimated flood water surface elevations, debris loads, erosion and scour depth estimates will be provided for the bridge abutments, adjacent roadway approaches, and intermediate piers as required by the alternatives analysis. River hydraulics, meander migration, channel avulsions, the current CMZ delineation, and the adjacent tributary debris torrent will be considered in evaluating and recommending erosion and scour protection features for the proposed bridge and approach abutments.

The COUNTY HEC-RAS model will be modified to represent proposed bridge design conditions. This will include up to three combined bridge, bridge approach embankments and channel geometry configurations.

Bridge and roadway erosion and scour design will be performed to meet WSDOT Hydraulics Manual, Federal Highways Administration bridge, erosion and scour design criteria, which include scour protection for the 100-year flood, 1 percent Annual Exceedance Probability (AEP) event, and checked against the 500-year, 0.2 percent AEP. Criteria set forth in Chapter 4 of the WDFW Water Crossing Design Guidelines (2013) will be evaluated for proposed bridge. This scope includes a review of reach analysis criteria using information from the Channel Migration Zone studies, and a separate analysis of the velocity ratio conditions for the historic conditions and proposed bridge. These criteria and findings will be summarized in the hydraulics report.

The hydraulic model will be used to calculate the design water surface elevations for the selected bridge alternative, which will be used to design the low chord of the bridge. The CONSULTANT will recommend to the COUNTY an appropriate level of freeboard for debris passage. The CONSULTANT and the COUNTY will evaluate if fish passage criteria are being met. The model will also provide data to evaluate scour and erosion conditions at the bridge, abutments and roadway approaches.

Task 4.2.5 Riverbank Stability Assessment and Conceptual Plans

The SUBCONSULTANT will evaluate the potential for erosion and scour in areas where the proposed roadway embankment will be within the delineated Channel Migration Zone (CMZ) or 100-year floodplain. River hydraulics, meandering, channel avulsion, the delineated CMZ, and the tributary confluences will be considered in evaluating and recommending erosion and scour protection measures for the proposed roadway fill embankment areas.

River bank erosion and scour protection measures design will use the methods outlined in the Washington State, Aquatic Habitat Protection, Integrated Streambank Protection Guidelines (WDFW, 2003) and Federal Highways Administration design criteria for roadway erosion and scour protection. The river bank erosion and scour protection measures design will build on river bank stability details shown in the COUNTY February 2013 plans. Preliminary engineering analyses and plans will be provided for up to three typical river bank erosion, scour and habitat enhancement details along proposed roadway sections with: 1) structural walls, 2) reinforced soil slopes and mechanically stabilized earth walls, 3) alluvial river and stream bank and bar. Conceptual design of these features will include hydraulic stability analyses of large woody debris, vegetated banks, and rock placement to withstand erosion and scour conditions.

It is anticipated that foundation improvements will be required for sections of river that have potential to scour and undermine the roadway embankment or walls. The CONSULTANT will coordinate hydraulic and geotechnical analyses to develop up to two preliminary design details for these conditions. It is envisioned that the two foundation protection preliminary design alternatives will include 1) overexcavation of alluvial deposits down to colluvial deposits, with rock (riprap) backfill and 2) partial excavation of alluvial deposits, rock backfill and installation of driven H-piles for structural reinforcement. Concrete and grouting options will not be considered for environmental protection reasons.

The CONSULTANT and the COUNTY will confer with WDFW representatives to identify if the proposed measures are acceptable to satisfy bank stability and habitat requirements. A set of conceptual erosion and scour protection plans and associated engineering design will be accomplished in this task with design information required to complete permit applications submitted.

Task 4.2.6 Agency Meetings

Key project elements and findings will be discussed with the services and select stakeholders. Likely participants will include the COUNTY, Washington Department of Fish & Wildlife (WDFW), US Forest Service, and Washington State Department of Transportation (WSDOT) Local Programs. Time has been provided for the SUBCONSULTANT's hydraulic engineer to attend up to two, two hour meetings at the project site.

Task 4.2.7 Documentation

The results of the hydraulic and scour analyses will be documented in a hydraulic report. The report will include a description of the physical characteristics of the site, including photographs taken during the site reconnaissance, text, tables, and figures that describe the results of the hydraulic analysis, and revetment/riverbank protection recommendations. The CONSULTANT's report will include key hydraulic related data needed for permit application. A draft version of the report (1 digital copy) will be provided to the COUNTY for review and comment.

The CONSULTANT will attend a 2 hour meeting with the COUNTY to review the bridge design Type, Size, Location (TS&L), scour design and riverbank erosion conceptual design plans.

Based on COUNTY comments, The CONSULTANT will revise and finalize the report and provide 1 digital and 5 hard copies.

Task 4.2 Deliverables

- Draft and Final Hydraulics Report. Digital copies shall be provided in native Microsoft Word 2010 format and in PDF format.
- Conceptual Plans in PDF format and 5 (five) sets of hard copies.

- Complete copies of all updated hydraulic models with data files.

Task 4.3 Bridge Scour and Riverbank Protection Design (Phase 2)

The SUBCONSULTANT will provide bridge scour protection and riverbank erosion and scour protection design plans, details and special provisions specifications as outlined in the following sections.

Task 4.3.1 60% Design Plan Review

The SUBCONSULTANT will provide redline review and comments on the revised 60% design plans which include the additional topographic survey data in the project basemap and revised designs of the roadway, walls, slopes, and design of other elements, including the proposed bridge.

Task 4.3.2 Bridge Erosion and Scour Protection Design Plans & Details

The SUBCONSULTANT will provide 90% and Final plans, details and specification special provisions for bridge erosion and scour protection designs using the preferred alternatives from the conceptual designs (Section 4.2.5). Bridge erosion and scour protection features include rock (riprap) materials underneath the bridge. Large woody debris and plantings will not be evaluated beneath the bridge due to flood and debris conveyance considerations. Both rock and vegetated soil slopes with rock, wood and bioengineering will be provided for roadway approach sections that may have MSE walls and Reinforced Soil Slopes (RSS), and will use similar details as the roadway design sections.

Task 4.3.3 Riverbank Erosion and Scour Protection Design Plans & Details

The SUBCONSULTANT will provide 90% and Final plans, details and specification special provisions for riverbank erosion and scour protection designs. Riverbank erosion and scour protection features may include rock (riprap), piles, large woody debris, anchorage and planting plans that will be incorporated with the geotechnical MSE and RSS wall designs.

Task 4.3.4 60%, 90% Final Plan Review Meetings and Calls

The SUBCONSULTANT will attend three, two hour combined progress/design review meetings, one each for the revised 60%, 90% and Final Plan submittals at COUNTY offices. The SUBCONSULTANT will attend up to four, one hour conference calls for plan development and review.

Task 4.3 Deliverables

- Design calculations, drawings and layouts, details, quantities, unit costs, memoranda and other information needed for the subtask items above to prepare the 90% and Final design plans, special provisions and construction costs.

Task 4.4 Permitting Assistance

The SUBCONSULTANT will provide up to 48 hours of support to the CONSULTANT during review and input to environmental documents and permit applications. Besides verbal and other communication, the SUBCONSULTANT's deliverables will include:

- Technical documentation of hydraulic analyses: Relevant data will describe anticipated project impacts to flood characteristics, channel response, habitat benefits, etc.
- Quantity estimates and construction elements: Estimates of excavation and fill, riverbank protection measures, dewatering, site access, sequencing, costs, etc.

Task 4 Assumptions

9. The SUBCONSULTANT will attend up to three progress/design review meetings at COUNTY offices.
10. The COUNTY will provide requested HEC-RAS modeling files, CAD/GIS drawings and shapefiles and surfaces, in electronic formats.
11. The existing HEC-RAS model is developed based on LIDAR with some local survey information. The HEC-RAS model will be updated to incorporate limited amounts of recent survey data, from the COUNTY and as part of this scope of services, near the proposed bridge and roadway embankment to reflect existing conditions. The extents are 1,000 feet upstream from the proposed bridge to 1,000 feet downstream from the start of the project roadway realignment.

12. The CONSULTANT will provide bridge and roadway embankment plans and section details (elevation detail) in AutoCAD for S&W to modify for bridge and riverbank erosion and scour design plan and details.
13. Bridge hydraulics design assumes that the WSDOT and FHWA design manuals will be followed and that the WDFW Water Crossing Design Guidelines will be checked and met for the velocity ratio criteria. A full reach analysis, as described in the WDFW guidelines, will not be performed. A summary of existing studies will be provided and compared with the WSDOT, FHWA design manuals and WDFW guidelines.
14. FEMA floodplain map revisions, CLOMR/LOMR applications and remapping are not included in this scope of services and can be provided upon request from the COUNTY
15. Preliminary designs and the resulting final designs are limited to those types of designs identified above. Use or selection of different design methods and features require changes in scope and budget.

The SUBCONSULTANT will provide design plans and details in AutoCAD format, to which the CONSULTANT will incorporate the design plans and details into the final plans and specifications. The SUBCONSULTANT will provide professional stamps on reports and letters submitted to the CONSULTANT. The CONSULTANT will stamp and sign the final plans which include SUBCONSULTANT designs, and by reference professional stamps included in the supporting reports and design memoranda.

EXHIBIT G-2
Subconsultant Fee Determination – Budget

EXHIBIT G-1, SUBCONSULTANT FEE
SHANNON and WILSON

S&W Task 3 Costs
6/18/2013

Index-Galena Road MP 6.4 to 6.9 Realignment
Snohomish County - RC 1532 / UPI #06-0150

GEOTECHNICAL ENGINEERING - TASK 3

SHANNON & WILSON PERSONNEL

	Position Classification	Hours		Billing Rate		Cost
1	Officer	156	X	$224.40	= $	35,006
2	Associate	10	X	$180.40	= $	1,804
3	Senior Tech Staff	510	X	$133.26	= $	67,965
4	Professional Staff	635	X	$110.37	= $	70,083
5	Senior Drafter / Tech	29	X	$103.04	= $	2,988
6	Drafter / Tech	95	X	$98.72	= $	9,379
7	Administrative (Senior)	39	X	$86.88	= $	3,388
8	Administrative	14	X	$61.14	= $	856
	Total Hours	1,488		TOTAL PERSONNEL COSTS =	$	191,469

DIRECT NONSALARY COSTS (DNSC)

Mileage	1000	miles @	$ 0.565	$	565
B&W 8.5x11 Copies	750	copies @	$ 0.10	$	75
B&W 11x17 Copes	350	copies @	$ 0.20	$	70
Color 8.5x11 Copies	250	copies @	$ 1.00	$	250
Color 11x17 Copies	150	copies @	$ 2.00	$	300
	TOTAL REIMBURSABLE EXPENSES (DNSC) =			$	1,260

TOTAL AUTHORIZED AMOUNT =	$	192,729

EXHIBIT G-1, SUBCONSULTANT FEE
SHANNON and WILSON

S&W Task 3 Hours
6/18/2013

TASK 3 - GEOTECHNICAL ENGINEERING	Shannon & Wilson Personnel							
	Officer	Associate	Senior Staff	Professional Staff	Sr. Drafter / Tech	Drafter / Tech	Senior Admin.	Admin
Task 3.1 Project Management	18	0	32	0	0	0	0	0
Invoicing & Progress Reports	2		8					
Scheduling, coordination, work assignments			24					
Quality control / quality assurance	16							
Task 3.2 Preliminary Design	79	10	273	361	8	35	29	0
Task 3.2.1 Bridge Foundations								
Estimate axial resistance - Drilled Shafts and Driven Piles	2	2	4	6				
Estimate lateral resistance - Drilled Shafts and Driven Piles	0.5	1	2	6				
Driveability Analysis	0.5	1	4	5				
Foundation settlement estimate	0.5		2	4				
Geotechnical Design Memorandum - Bridge Foundations	4		8	16			4	
Task 3.2.2 Walls and Slopes								
Soldier Pile Walls - Earth Pressures	1		4	8	2	6		
Soldier Pile Walls - Global stability analyses	1		8	16				
Soldier Pile Walls - Drainage Recommendations			2	4		3		
Soldier Pile Walls - Geotechnical Design Memorandum	4		8	16			4	
MSE Walls - Earth Pressures	0.5		2	4	2	6		
MSE Walls - Estimate bearing resistance	0.5		4	8				
MSE Walls - Estimate sliding resistance	0.5		2	4				
MSE Walls - Global stability analyses	2		8	20				
MSE Walls - Sliding, Bearing and Overturning Analyses	1		8	16				
MSE Walls - Estimate settlement	0.5		2	4				
MSE Walls - Facing Recommendations	0.5		3	2		2		
MSE Wall Drainage Recommendations	0.5		2	4		3		
MSE Walls - Geotechnical Design Memorandum	2		16	24			6	
MSE Wall Drainage Recommendations	0.5		2	4		3		
Global and compound stability analyses - RSS	4		16	40				
Estimate RSS sliding resistance	1		2	4				
RSS - Facing Recommendations	0.5		2	3		2		
Geotechnical Design Memorandum - RSS	2		16	24			4	
Task 3.2.3 Boulders and Rock Outcrops								
Size and Location Study	4		6	16				
Preliminary Site Plan	1		4	8	2	4		
Geotechnical Design Memorandum - Boulder and Rock Excavation	2		8	16			4	
Task 3.2.4 Rock Fall Mitigation Systems								
Conceptual Details and Sketches	1		4	8	1	4		
Meeting			4					
Geotechnical Design Memorandum - Rock Fall Mitigation Systems	2		4	8			2	
Task 3.2.5 Armored Crossing								
Confirm HEC-RAS model		2	4					
Mean Annual Flood - Culvert Size Analysis		2	8					
Roadway Apron - Erosion and Scour Potential	0.5	2	8					
Estimate Debris Flow Load	0.5		4					
Confirm Roadway Prism Stability	0.5		4					
Geotechnical Design Memorandum - Armored Crossing	2		4	8			2	
Task 3.2.6 Riverbank Scour and Erosion Protection								
Structual Wall Conceptual Details and Sketches	1		8		1	2		
Geotechnical Appendix - Hydraulic Report	1		2				1	
Task 3.2.7 Field Investigations								
Site Visits with Project Team	30		30	30				
Field Reconnaissance			20	20				
Task 3.2.8 Meetings								
Agency Meetings			16					
Preliminary Design Meeting	4		8					
Task 3.3 Final Design	45	0	185	248	14	60	6	14
Task 3.3.1 Snohomish County 60% Plan Review								
Revised 60% Redline Plan Review	1		8	8				
Task 3.3.2 Walls and Slopes								
Design Preparation	2		4	6		4		
Drawings	4		8	12	4	16		
Special Provisions	4		12	40			2	6
Quantities and Construction Cost Estimate	0.5		2	4				
Review Contract Drawings	2		20					

Task 3.3.3 Large Boulders and Rock Outcrops									
Design Preparation	1		4	10					
Drawings	1		8	12	2	8			
Special Provisions	1		8	16			1	2	
Quantities and Construction Cost Estimate	0.5		1	2					
Review Contract Drawings	0.5		8						
Task 3.3.4 Debris Diversion Berm									
Design Preparation	1		4	10					
Drawings	2		8	12	2	8			
Special Provisions	1		4	8			1	2	
Quantities and Construction Cost Estimate	0.5		1	2					
Review Contract Drawings	1		8						
Task 3.3.5 Armored Crossing									
Design Preparation	1		4	10					
Drawings	2		8	12	2	8			
Special Provisions	1		4	8			1	2	
Quantities and Construction Cost Estimate	0.5		1	2					
Review Contract Drawings	1		8						
Task 3.3.6 Rock Fall Mitigation Systems									
Design Preparation	1		4	15					
Drawings	2		8	12	4	16			
Special Provisions	4		8	15			1	2	
Quantities and Construction Cost Estimate	0.5		2	4					
Review Contract Drawings	2		12						
Task 3.3.7 60%, 90% Final Plan Review Meetings and Calls									
Review Meetings			12	12					
Conference Calls	4		4	4					
Task 3.3.8 Summary of Geotechnical Conditions									
Draft Summary of Geotechnical Conditions	4		8	12					
Final Summary of Geotechnical Conditions	1		2	4					
Task 3.4 Geotechnical Support During Bidding	13	0	20	28	7	0	4	0	
Prebid Meeting Attendance	5		6						
Response to Bidder Inquiries (3 assumed)	3		6	12	3		2		
Preparation of Bid Addendum (1 assumed)	4		8	16	4		2		
SUBTOTAL TASK 3 HOURS	156	10	510	635	29	95	39	14	

EXHIBIT G-1, SUBCONSULTANT FEE
SHANNON and WILSON

S&W Task 4 Costs
6/18/2013

Index-Galena Road MP 6.4 to 6.9 Realignment
Snohomish County - RC 1532 / UPI #06-0150

HYDRAULIC ENGINEERING - TASK 4

SHANNON & WILSON PERSONNEL

	Position Classification	Hours		Billing Rate		Cost
1	Officer	52	X	$224.40	= $	11,669
2	Associate	266	X	$180.40	= $	47,987
3	Senior Tech Staff	412	X	$133.26	= $	54,905
4	Professional Staff	48	X	$110.37	= $	5,298
5	Senior Drafter / Tech	166	X	$103.04	= $	17,105
6	Drafter / Tech	112	X	$98.72	= $	11,057
7	Administrative (Senior)	0	X	$86.88	= $	-
8	Administrative	36	X	$61.14	= $	2,201
	Total Hours	1,092		TOTAL PERSONNEL COSTS =	$	150,220

DIRECT NONSALARY COSTS (DNSC)

Mileage	500	miles @ $	0.565	$	283
B&W 8.5x11 Copies	250	copies @ $	0.10	$	25
B&W 11x17 Copes	150	copies @ $	0.20	$	30
Color 8.5x11 Copies	50	copies @ $	1.00	$	50
Color 11x17 Copies	50	copies @ $	2.00	$	100
Lodging (WSDOT)	2	nights @ $	96.00	$	192
Per Diem (WSDOT)	4	days @ $	61.00	$	244
	TOTAL REIMBURSABLE EXPENSES (DNSC) =			$	924

TOTAL AUTHORIZED AMOUNT = $ 151,144

EXHIBIT G-1, SUBCONSULTANT FEE
SHANNON and WILSON

S&W Task 4 Hours
6/18/2013

TASK 4 - HYDRAULIC ENGINEERING	Shannon & Wilson Personnel							
	Officer	Associate	Senior Staff	Professional Staff	Sr. Drafter / Tech	Drafter / Tech	Senior Admin.	Admin
Task 4.1 Project Management	18	14	4	0	0	0	0	0
Invoicing & Progress Reports	2	6	4					
Scheduling, coordination, work assignments		8						
Quality control / quality assurance	16							
Task 4.2 Field Work & Studies	14	160	256	0	112	72	0	24
4.2.1 Data Collection		8	16					
4.2.2 Field Reconnaissance		24	24		16			
4.2.3 Existing Hydrology & Hydraulics		8	32		16			
4.2.4 Bridge Flood Hydraulics, Scour and Concept Design								
Bridge Hydraulics Design Guideline and Criteria Review		16	16					
3 Bridge Sections Hydraulics		8	24					
Scour Analyses		8	24					
Bridge Concept Scour Design Plans & Details	2	4	16		8	8		
4.2.5 Riverbank Flood Hydraulics, Channel Migration, Scour and Concept Design								
River Migration & Scour Potential		16	16		8	8		
Road Embankment Hydraulics & Scour		8	24		8	8		
3 Concept Riverbank Protection Design Plans & Detail	2	8	24		12	12		
2 Foundation Improvements & Scour Protection Plans & Details	2	4	16		8	8		
4.2.6 Agency Meetings		8						
4.2.7 Documentation								
Draft Report for BA Review	8	24	40		20	20		8
Draft - Final Report to County		8	8		8			8
Final Report		8	16		8	8		8
Task 4.3 Bridge Scour & Riverbank Protection Design	18	76	96	40	48	40	0	12
4.3.1 Snohomish County 60% Plan Review								
Revised 60% Design Plans Redline Review		8	8					
4.3.2 Bridge Scour Design Plans								
90% Design Plans & Details	2	8	8		8	8		
90% Design Plan Special Provisions	2	8	8					4
Quantities and Construction Cost Estimate	1	2	4		4			
Final Design Plans & Details	2	4	8		8	8		
Final Design Plan Special Provisions	2	4	8					2
4.3.3 River Embankment Erosion and Scour Design Plans								
90% Design Plans & Details	2	8	16	16	16	16		
90% Design Plan Special Provisions	2	8	16	8				4
Quantities and Construction Cost Estimate	1	2	4		4			
Final Design Plans & Details	2	4	8	8	8	8		
Final Design Plan Special Provisions	2	4	8	8				2
4.3.4 60%, 90%, Final Plan Review Mtgs		16						
Task 4.4 Permitting Assistance	2	16	16	8	8	0	0	0
Permitting Assistance	2	16	16	8	8			
SUBTOTAL TASK 4 HOURS	52	266	412	48	168	112	0	36

EXHIBIT G-2
Subconsultant Fee Determination – Summary Sheet
Fee Schedule

Subconsultant: Shannon & Wilson, Inc.

Position Classification	Max Direct Salary Rate	Overhead @201.36%	Profit @25.75%	Max Rate Per Hour
Officer (T25,27,28,29)	$68.60	$138.13	$17.66	$224.40
Associate (T24)	$55.15	$111.05	$14.20	$180.40
Associate (T22,23)	$54.57	$109.88	$14.05	$178.50
Eng/Geol/Hydro/Enviro/Risk Assess Senior Tech Staff (SeniorPrincipal, Principal & Senior) (T18, 19, 20)	$40.74	$82.03	$10.49	$133.26
Professional Staff II-IV (T15, 16, 17)	$33.74	$67.94	$8.69	$110.37
Professional Staff I (T14)	$31.18	$62.79	$8.03	$102.00
Senior Drafter/Technician (S17,19)	$31.50	$63.43	$8.11	$103.04
Drafter/Technician I-IV (S09,10,11,13,15)	$30.18	$60.77	$7.77	$98.72
Administrative (A17)	$26.56	$53.48	$6.84	$86.88
Administrative (A09,10,11,13,15)	$18.69	$37.63	$4.81	$61.14

The rates listed above are the maximum rates payable under this AGREEMENT. Rates invoiced shall be based on the direct salary of the individual employee and shall not exceed those listed in this Exhibit G-2.

EXHIBIT G-3
Breakdown of Subconsultant's Overhead Cost

SUBCONSULTANT'S audited overhead report from the WSDOT Audit Office, or other report supporting Overhead Rate (per Chapter 31.5 of the WSDOT Local Agency Guidelines), provided by SUBCONSULTANT attached hereto and incorporated herein as Exhibit "G-3".

Washington State Department of Transportation
Paula J. Hammond, P.E.
Secretary of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300

360-705-7000
TTY: 1-800-833-6388
www.wsdot.wa.gov

August 28, 2012

Jeannie Brozik, Accounting Manager
Shannon and Wilson, Inc.
400 N. 34th St, Suite 100
P.O. Box 300303
Seattle, WA 98103-8600

Re: Shannon and Wilson, Inc. Overhead Schedule
Fiscal Year End December 31, 2011

Dear Ms. Brozik:

We have completed a desk review of your overhead schedule for the above referenced fiscal year. Our review included the documentation provided by Shannon and Wilson, Inc.

The reviewed data included, but was not limited to; the schedule of the indirect cost rate, a description of the company, basis of accounting and description of Shannon and Wilson, Inc. accounting system and the basis of indirect costs.

Based on our work, we are issuing this letter of review establishing Shannon and Wilson, Inc. overhead rate for the fiscal year ending December 31, 2011, at 201.36% (rate includes Facilities Cost of Capital) of direct labor. Costs billed to actual agreements will still be subject to audit of actual costs.

Please check with the WSDOT Consultant Services Office (HQ) and/or the WSDOT Area Consultant Liaison to determine when this reviewed rate will be applicable to your WSDOT agreement(s).

Also, remember that when you provide next year's overhead schedule to our office, you will also need to submit **either** your internally prepared *Compensation Analysis* for our review, or use the *National Compensation Matrix* (NCM) format to prepare your alternate analysis and we will review that. The NCM is a tool that establishes compensation amounts presumed reasonable for certain executive positions. The *Compensation Analysis* and NCM are described further in the AASHTO Audit Guide, Chapter 7. We will need your *Compensation Analysis*, or alternative analysis based on use of the NCM, in order to complete our review of your overhead schedule.

If you, or any representatives of Shannon and Wilson, Inc., have any questions, please contact Martha Roach, Jeri Sivertson, or Steve McKerney at (360)705-7003.

Sincerely,

Martha S. Roach
Agreement Compliance Audit Manager

MR:ds
Enclosures

cc: Steve McKerney, Director of Internal Audit
Jeri Sivertson, Assistant Director of Internal Audit
Larry Schofield, MS 47323
File

Shannon & Wilson, Inc.
Overhead Schedule
For Year Ending December 31, 2011

Description	Amount	S&W Adj.	WSDOT Adj	Ref.	Accepted Amount	%
Direct Labor Base	$ 11,876,152				$ 11,876,152	100.00%
Fringe Benefits						
Additional Compensation	$ 1,317,944		$ (1,317,944)	R	$ -	0.00%
Retirement Plan Contributions	698,384				698,384	5.88%
Vacation, Holiday, Sick	1,402,159				1,402,159	11.81%
Payroll Fringes	2,756,222				2,756,222	23.21%
Total Fringe Benefits	$ 6,174,709	$ -	$ (1,317,944)		$ 4,856,765	40.90%
General Overhead Expenses						
Administrative Salaries	$ 3,524,896	$ (3,282)		A	$ 3,521,614	29.65%
Proposal & Bus Dev Labor	3,388,447	(182,753)		B	3,205,694	26.99%
Vacation Holiday Sick	794,260				794,260	6.69%
Fringes on G&A Salaries	1,664,320	(103,045)	(8,470)	C, D, Q	1,552,805	13.07%
Retirement Plan Contributions	395,603		(12,890)	O	382,713	3.22%
Equipment Expense	15,214				15,214	0.13%
Rent & Facility Expense	1,992,030	(5,204)		L	1,986,826	16.73%
Travel & Auto Expense	371,600	(9,695)		F	361,905	3.05%
Proposal & Bus Dev Expense	751,670	(458,212)		B,G,H	293,458	2.47%
Interest	2,704	(2,704)		I	0	0.00%
Supplies	533,773				533,773	4.49%
Outside Prof and Tech Srvcs	774,165	(473)		M	773,692	6.51%
Computer Expenses	518,620				518,620	4.37%
Telephone & Postage	366,694				366,694	3.09%
Conferences & Prof Activities	685,943	(36,820)		F	649,123	5.47%
Depreciation	665,270				665,270	5.60%
Insurance	668,257				668,257	5.63%
Taxes & Licenses	1,967,249	(1,300,625)		J	666,624	5.61%
Bad Debt	(8,850)	8,850		K	0	0.00%
Additional Compensation	246,557	500,000	1,317,944	E,R	2,064,501	17.38%
Total General Overhead	$ 19,318,422	$ (1,593,963)	$ 1,296,584		$ 19,021,043	160.16%
Total Overhead Costs	$ 25,493,131	$ (1,593,963)	$ (21,360)		$ 23,877,808	201.06%
Overhead Rate (Less FCC)	214.66%	201.24%			201.06%	
Facilities Capital Cost of Money				N	$ 36,172	0.30%
Total Overhead Costs w/FCC					$ 23,913,980	
Overhead Rate (Includes FCC)					201.36%	

"Shannon & Wilson - Reviewed & Accepted 8/27/2012 MJP"
"Overhead Rate still subject to WSDOT Audit"

Shannon & Wilson, Inc.
Overhead Schedule
For Year Ending December 31, 2011

Description	Amount	S&W Adj.	WSDOT Adj	Ref.	Accepted Amount	%

References		Description
A	31.205-3	Labor costs related to collection of bad debt
B	31.205-1	Advertising and public relations labor and costs
C	31.205-1	Taxes related to unallowable promotion labor
D	31.205-13	Unallowable meals and employee gifts
E	31.205-6	Accrued bonuses not paid in current year
F	31.205-46	Excess per diem and travel expenses
G	31.205-8	Unallowable contribution costs
H	31.205-14	Unallowable entertainment costs
I	31.205-20	Interest expense
J	31.205-41	Federal income taxes
K	31.205-3	Bad debts
L	31.203(b)	Rent charged as direct costs to projects
M	31.205-47	Unallowable legal expenses
N	31.205-10(b)	Facilities Capital Cost of Money

WSDOT Adjustments

O Fringe Benefits (retirement plan) associated with Unallowable Labor (Ref A,B) removed, per WSDOT worksheet, 31.205-1 (c) and 31.205-6 (m)

Q Gifts unallowable 31.205-13 (b)

R Bonuses was moved to one account for better visibility.

Certification of Final Indirect Costs

Firm Name: Shannon & Wilson, Inc.

Indirect Cost Rate Proposal: 201.5%

Date of Proposal Preparation (mm/dd/yyyy): 06/15/2012

Fiscal Period Covered (mm/dd/yyyy to mm/dd/yyyy): 01/01/2011 to 12/31/2011

I, the undersigned, certify that I have reviewed the proposal to establish final indirect cost rates for the fiscal period as specified above and to the best of my knowledge and belief:

1.) All costs included in this proposal to establish final indirect cost rates are allowable in accordance with the cost principles of the Federal Acquisition Regulations (FAR) of title 48, Code of Federal Regulations (CFR), part 31.

2.) This proposal does not include any costs which are expressly unallowable under the cost principles of the FAR of 48 CFR 31.

All known material transactions or events that have occurred affecting the firm's ownership, organization and indirect cost rates have been disclosed.

Signature: Gerard J. Buechel

Name of Certifying Official* (Print): Gerard J. Buechel

Title: President

Date of Certification (mm/dd/yyyy): 7/12/2012

*The "Certifying Official" must be an individual executive or financial officer of the firm at a level no lower than a Vice President or Chief Financial Officer, or equivalent, who has the authority to represent the financial information utilized to establish the indirect cost rate for use under Agency contracts.

Ref. FHWA Directive 4470.1A available on line at:
http://www.fhwa.dot.gov/legsregs/directives/orders/44701a.htm

O/H Certification; Nov 2010

EXHIBIT H
Title VI Assurances

During the performance of this AGREEMENT, the CONSULTANT, for itself, its assignees and successors in interest agree as follows:

1. Compliance with Regulations: The CONSULTANT shall comply with the regulations relative to non-discrimination in federally assisted programs of the COUNTY, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the "REGULATIONS"), which are herein incorporated by reference and made a part of this AGREEMENT.

2. Non-discrimination: The CONSULTANT, with regard to the work performed during the AGREEMENT, shall not discriminate on the grounds of race, color, sex, or national origin in the selection and retention of sub-consultants, including procurement of materials and leases of equipment. The CONSULTANT shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the REGULATIONS, including employment practices when the AGREEMENT covers a program set forth in Appendix B of the REGULATIONS.

3. Solicitations for Sub-consultants, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiations made by the CONSULTANT for work to be performed under a sub-contract, including procurement of materials or leases of equipment, each potential sub-consultant or supplier shall be notified by the CONSULTANT of the CONSULTANT's obligations under this AGREEMENT and the REGULATIONS relative to non-discrimination on the grounds of race, color, sex, or national origin.

4. Information and Reports: The CONSULTANT shall provide all information and reports required by the REGULATIONS or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by COUNTY, STATE or the Federal Highway Administration (FHWA) to be pertinent to ascertain compliance with such REGULATIONS, orders and instructions. Where any information required of a CONSULTANT is in the exclusive possession of another who fails or refuses to furnish this information, the CONSULTANT shall so certify to the COUNTY, STATE or the FHWA as appropriate, and shall set forth what efforts it has made to obtain the information.

5. Sanctions for Non-compliance: In the event of the CONSULTANT's non-compliance with the non-discrimination provisions of this AGREEMENT, the COUNTY shall impose such AGREEMENT sanctions as it, the STATE or the FHWA may determine to be appropriate, including, but not limited to:

   - Withholding of payments to the CONSULTANT under the AGREEMENT until the CONSULTANT complies, and/or;

   - Cancellation, termination, or suspension of the AGREEMENT, in whole or in part.

6. Incorporation of Provisions: The CONSULTANT shall include the provisions of Paragraphs (1) through (5) in every sub-contract, including procurement of materials and leases of equipment, unless exempt by the REGULATIONS, or directives issued pursuant thereto. The CONSULTANT shall take such action with respect to any sub-consultant or procurement as the COUNTY, STATE or FHWA may direct as a means of enforcing such provisions including sanctions for non-compliance.

   Provided, however, that in the event a CONSULTANT becomes involved in, or is threatened with, litigation with a sub-consultant or supplier as a result of such direction, the CONSULTANT may request the COUNTY and the STATE enter into such litigation to protect the interests of the COUNTY and the STATE and, in addition, the CONSULTANT may request the United States enter into such litigation to protect the interests of the United States.

EXHIBIT I
Payment Upon Termination of Agreement By the COUNTY Other Than for Fault of the CONSULTANT

(Refer to Agreement, Section IX)

Specific Rates of Pay Contracts

A final payment shall be made to the CONSULTANT for actual hours charged at the time of termination of this AGREEMENT plus any direct non-salary costs incurred at the time of termination of this AGREEMENT.

EXHIBIT J
Alleged Consultant Design Error Procedures

The purpose of this exhibit is to establish a procedure to determine if a CONSULTANT's alleged design error is of a nature that exceeds the accepted standard of care. In addition, it will establish a uniform method for the resolution and/or cost recovery procedures in those instances where the COUNTY believes it has suffered some material damage due to the alleged error by the CONSULTANT.

Step 1 - Potential CONSULTANT Design Error(s) is identified by COUNTY'S Project Manager

At the first indication of potential CONSULTANT design error(s), the first step in the process is for the COUNTY'S Project Manager to notify the Director of Public Works or County Engineer regarding the potential design error(s). For Federally funded projects, the Region Highways and Local Programs Engineer should be informed and involved in these procedures. (Note: The Director of Public Works or County Engineer may appoint a county staff person other than the Project Manager, who has not been as directly involved in the project, to be responsible for the remaining steps in these procedures.)

Step 2 - Project Manager Documents the Alleged CONSULTANT Design Error(s)

After discussion of the alleged design error(s) and the magnitude of the alleged error(s), and with the Director of Public Works or County Engineer's concurrence, the Project Manager obtains more detailed documentation than is normally required on the project. Examples include: all decisions and descriptions of work: photographs, and records of labor, materials and equipment.

Step 3 - Contact the CONSULTANT Regarding the Alleged Design Error(s)

If it is determined there is a need to proceed further, the next step in the process is for the Project Manager to contact the CONSULTANT regarding the alleged design error(s) and the magnitude of the alleged error(s). The Project Manager and other appropriate COUNTY staff should represent the COUNTY and the CONSULTANT should be represented by CONSULTANT's Project Manager and any personnel (including sub-consultants) deemed appropriate for the alleged design error(s) issue.

Step 4 - Attempt to Resolve Alleged Design Error(s) with CONSULTANT

After the meeting(s) with the CONSULTANT have been completed regarding the CONSULTANT'S alleged design error(s), there are three possible scenarios:

- It is determined via mutual agreement that there is not a CONSULTANT design error(s). If this is the case, the process will not proceed beyond this point.

- It is determined via mutual agreement that a CONSULTANT design error(s) occurred. If this is the case, the Director of Public Works or County Engineer, or their representatives, negotiate a settlement with the CONSULTANT. The settlement would be paid to the COUNTY or the amount shall be reduced from the CONSULTANT'S AGREEMENT with the COUNTY for the services on the project in which the design error took place. The COUNTY is to provide Highways and Local Programs, through the Region Local Programs Engineer, a summary of the settlement for review and to make adjustments, if any, as to how the settlement affects federal reimbursements. No further action is required.

- There is not a mutual agreement regarding the alleged CONSULTANT design error(s). The CONSULTANT may request the alleged design error(s) issue be forwarded to the Director of Public Works or County Engineer for review. If the Director of Public Works or County Engineer, after review with their legal counsel, is not able to reach mutual agreement with the CONSULTANT, proceed to Step 5.

Step 5 - Forward Documents to Highways and Local Programs

For Federally funded projects all available information, including costs, should be forwarded through the Region Highway and Local Programs Engineer to Highways and Local Programs for their review and consultation with the FHWA. Highways and Local Programs will meet with representatives of the COUNTY and the CONSULTANT to review the alleged design error(s), and attempt to find a resolution to the issue. If necessary, Highways and Local Programs shall request assistance from the Attorney General's Office for legal interpretation. Highways and Local Programs will also identify how the alleged error(s) affects eligibility of project costs for Federal reimbursement.

- If mutual agreement is reached, the COUNTY and CONSULTANT may adjust the Scope of Work and costs to reflect the agreed upon resolution. Highways and Local Programs, in consultation with FHWA, will identify the amount of Federal participation in the agreed upon resolution of the issue.

- If mutual agreement is not reached, the COUNTY and CONSULTANT may seek settlement by arbitration or by litigation.

EXHIBIT K
Consultant Claim Procedures
(Applicable to Consultant Claims for More Than $1000)

This exhibit will outline the procedures to be followed by the CONSULTANT and the COUNTY to consider a potential claim by the CONSULTANT.

Step 1 – CONSULTANT Files a Claim with the COUNTY Project Manager

If the CONSULTANT determines that CONSULTANT was requested to perform additional services that were outside of the AGREEMENT'S Scope of Work, CONSULTANT may be entitled to a claim. The first step that must be completed is the request for consideration of the claim by the COUNTY'S Project Manager.

The CONSULTANT'S claim must outline the following:

- Summation of hours by classification for each firm that is included in the claim;
- Any correspondence that directed the CONSULTANT to perform the additional work;
- Timeframe of the additional work that was outside of the project scope;
- Summary of direct labor dollars, overhead costs, profit and reimbursable costs associated with the additional work; and
- Explanation as to why the CONSULTANT believes the additional work was outside of the agreement Scope of Work.

Step 2 – Review by COUNTY Personnel Regarding the CONSULTANT'S Claim for Additional Compensation

After the CONSULTANT has completed Step 1, the next step in the process is to forward the request to the COUNTY'S Project Manager. The Project Manager will review the CONSULTANT'S claim and will meet with the Director of Public Works or County Engineer to determine if the COUNTY agrees with the claim. If the FHWA is participating in the project's funding, the COUNTY will forward a copy of the CONSULTANT'S claim and the COUNTY'S recommendation for Federal participation in the claim to the WSDOT Highways and Local Programs through the Region Local Programs Engineer. If the claim is not eligible for Federal participation, payment will need to be from COUNTY funds.

If the COUNTY Project Manager, Director of Public Works or County Engineer, WSDOT Highways and Local Programs (if applicable), and FHWA (if applicable) agree with the CONSULTANT'S claim, the COUNTY will send a request memo, including backup documentation, to the CONSULTANT to either supplement the AGREEMENT or create a new AGREEMENT for the claim. After the request has been approved, the COUNTY shall write the supplement and/or new AGREEMENT and pay the CONSULTANT the amount of the claim. The COUNTY will inform the CONSULTANT that the Final Payment for the AGREEMENT is subject to audit. No further action is needed regarding the claim procedures.

If the COUNTY does not agree with the CONSULTANT'S claim, proceed to Step 3 of the procedures.

Step 3 – Preparation of Supporting Documentation Regarding CONSULTANT'S Claim(s)

If the COUNTY does not agree with the CONSULTANT'S claim, the Project Manager shall prepare a summary for the Director of Public Works or County Engineer that includes the following:

- Copy of information supplied by the CONSULTANT regarding the claim;

- COUNTY'S summation of hours by classification for each firm that should be included in the claim;
- Any correspondence that directed the CONSULTANT to perform the additional work;
- COUNTY'S summary of direct labor dollars, overhead costs, profit and reimbursable costs associated with the additional work;
- Explanation regarding those areas in which the COUNTY does/does not agree with the CONSULTANT'S claim(s);
- Explanation to describe what has been instituted to preclude future CONSULTANT claim(s); and
- Recommendations to resolve the claim.

Step 4 – Director of Public Works or County Engineer Reviews CONSULTANT Claim and COUNTY Documentation

The Director of Public Works or County Engineer shall review and administratively approve or disapprove the claim, or portions thereof, which may include getting County Council or Commission approval (as appropriate to COUNTY dispute resolution procedures). If the project involves Federal participation, obtain concurrence from WSDOT Highways and Local Programs and FHWA regarding final settlement of the claim. If the claim is not eligible for Federal participation, payment will be from COUNTY funds.

Step 5 – Informing CONSULTANT of Decision Regarding the Claim

The Director of Public Works or County Engineer shall notify (in writing) the CONSULTANT of the COUNTY's final decision regarding the CONSULTANT'S claim(s). Include the final dollar amount of the accepted claim(s) and rationale utilized for the decision.

Step 6 – Preparation of Supplement or New AGREEMENT for the CONSULTANT'S Claim(s)

The COUNTY shall write the supplement and/or new AGREEMENT and pay the CONSULTANT the amount of the claim. Inform the CONSULTANT that the Final Payment for the AGREEMENT is subject to audit.

EXHIBIT M-1(a)
Certification of Consultant

PROJECT: Structural Engineering, Geotechnical Design, Survey and Mapping Services for the Index Galena Road (MP 6.4 – 6.9) Flood Repair Project

AGREEMENT NO.: CCF07-13

LOCAL AGENCY: Snohomish County

I hereby certify that I am the VICE PRESIDENT and a duly authorized representative of the firm of **BergerABAM Inc.** whose address is **3301 Ninth Avenue South, Suite 300, Federal Way, WA 98003**, and that neither the above firm nor I have:

a) Employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above CONSULTANT) to solicit or secure the AGREEMENT;

b) Agreed, as an express or implied condition for obtaining this AGREEMENT, to employ or retain the services of any firm or person in connection with carrying out this AGREEMENT; or

c) Paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above CONSULTANT) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out this AGREEMENT; except as hereby expressly stated (if any);

I acknowledge that this certificate is to be available to the Washington State Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation in connection with this AGREEMENT involving participation of Federal-aid highway funds, and is subject to applicable State and Federal laws, both criminal and civil.

BergerABAM Inc.

Signature (Authorized Official of Consultant) — *Date* 6/25/2013

EXHIBIT M-1(b)
Certification of COUNTY Official

PROJECT: Structural Engineering, Geotechnical Design, Survey and Mapping Services for the Index Galena Road (MP 6.4 – 6.9) Flood Repair Project

AGREEMENT NO.: CCF07-13

LOCAL AGENCY: Snohomish County

I hereby certify that I am the **Executive Director** of Snohomish County, Washington, and that the consulting firm or its representative has not been required, directly or indirectly as an express or implied condition in connection with obtaining or carrying out this AGREEMENT to:

a) Employ or retain, or agree to employ or retain, any firm or person; or

b) Pay, or agree to pay, to any firm, person, or organization, any fee, contribution, donation, or consideration of any kind; except as hereby expressly stated (if any);

I acknowledge that this certificate is to be available to the Washington State Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation in connection with this AGREEMENT involving participation of Federal-aid highway funds, and is subject to applicable State and Federal laws, both criminal and civil.

PETER B. CAMP
Executive Director

COUNTY Executive Director

8/8/13
Date

EXHIBIT M-2
Certification Regarding Debarment, Suspension, and Other Responsibility Matters-Primary Covered Transactions

PROJECT: Structural Engineering, Geotechnical Design, Survey and Mapping Services for the Index Galena Road (MP 6.4 – 6.9) Flood Repair Project

AGREEMENT NO.: CCF07-13

LOCAL AGENCY: Snohomish County

1. The prospective primary participant, **BergerABAM Inc.**, certifies to the best of its knowledge and belief that it and its principals:

   A. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

   B. Have not, within a three (3) year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction; violation of federal or state anti-trust statutes, or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

   C. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses enumerated in Paragraph (1)(B) of this certification; and

   D. Have not, within a three (3) year period preceding this application/proposal, had one or more public transactions (federal, state, or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

BergerABAM Inc.

[signature]

Signature (Authorized Official of Consultant)

6/25/2013

Date

EXHIBIT M-3
Certification Regarding the Restrictions of the Use of Federal Funds for Lobbying

PROJECT: Structural Engineering, Geotechnical Design, Survey and Mapping Services for the Index Galena Road (MP 6.4 – 6.9) Flood Repair Project

AGREEMENT NO.: CCF07-13

LOCAL AGENCY: Snohomish County

The prospective participant, **BergerABAM Inc.**, certifies, by signing and submitting this bid or proposal, to the best of its knowledge and belief, that:

1. No federal appropriated funds have been paid or shall be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a member of Congress, an officer or employee of Congress, or any employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of Federal contract, grant, loan or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or shall be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form – LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000, and that all such sub-recipients shall certify and disclose accordingly.

BergerABAM Inc.

Signature (Authorized Official of Consultant)

6/25/2013
Date

EXHIBIT M-4
Certificate of Current Cost or Pricing Data

PROJECT: Structural Engineering, Geotechnical Design, Survey and Mapping Services for the Index Galena Road (MP 6.4 – 6.9) Flood Repair Project

AGREEMENT NO.: CCF07-13

LOCAL AGENCY: Snohomish County

This is to certify that, to the best of my knowledge and belief, the cost or pricing data (as defined in Section 15.401 of the Federal Acquisition Regulation (FAR) and required under FAR Sub-section 15.403-4) submitted, either actually or by specific identification in writing, to the Contracting Officer or to the Contracting Officer's representative in support of RFQ-MRSC-02-13 are accurate, complete, and current as of June 13, 2013, when it was agreed and accepted between both parties (Snohomish County and **BergerABAM Inc.**) and submitted for contract document processing. This certification includes the cost pricing data supporting any advance agreements and forward pricing rate agreements between the offeror and the Government that are part of the proposal

BergerABAM Inc. Kurt Fenner

Authorized Representative

VICE PRESIDENT

Title

6/25/2013

Date

EXHIBIT N-2
Consultant Invoice (example)

XYZ Company
PO Box 92-1
Everett, WA 98201
425-XXX-XXXX

Invoice Date: January 3, 2012
Invoice Number: 1001
Project Name: Puget Park Drive Extension
Period: 12/1 – 12/31/11

Employee Name / Job Classification	Hours Worked		Rate		Cost	
Jim Jones, Associate	1	x	140.70	=	$140.70	
Terry Smy, Project Mgr	10	x	$111.94	=	$1,119.40	
Dan Dell, Design Eng	15	x	$73.16	=	$1,097.40	
Cat Sams, CADD Op	7	x	$59.72	=	$418.04	
Jake Jai, Clerical	3	x	$44.79	=	$134.37	
SUBTOTAL						$2,909.91
REIMBURSABLES:						
Mileage	75	x	$0.51	=	$38.25	
Courier	1		$11.13	=	$11.13	
Total Reimbursables:						$49.38
SUBCONSULTANTS:						
ABC Company	1	x	$10,000.00	=	$10,000.00	
LMN Company	1	x	$500.00	=	$500.00	
Total Sub-consultants:						$10,500.00
TOTAL DUE THIS INVOICE:						**$13,459.29**

EXHIBIT N-3
Consultant Progress Report (example)

PROJECT PROGRESS REPORT No. 1

Project Name: Puget Park Drive Extension

Client: Snohomish County Public Works – Civil

Prepared By: Terry Smy, Sr. PM
XYZ Company

TASKS ACCOMPLISHED:

Tasks Accomplished by XYZ Company:

- Participated in a project coordination meeting at County offices on 12/5/11. Status of survey, geotechnical investigations, environmental documentation, right-of-way plan preparation, right-of-way research, channelization plan, roadway design, and drainage design were discussed. County will prepare a survey control plan and draft wetland mitigation design for inclusion in the 60% PS&E package.
- Provided County with stream relocation sketches and wetland mitigation base sheet for design.

Tasks Accomplished by Sub-consultants:

- ABC attended coordination meeting same date. ABC continued coordination with County on sitting of proposed stormwater facilities and right-of-way requirements. Reviewed utility pothole information and revised 30% drainage profiles to minimize conflicts. Began Hydraulic Report and TESC plan for 60% PS&E (based on preferred construction staging and sequencing).
- LMN attended coordination meeting same date. Coordinated with County PM on project issues. Continued work on addressing 30% comments related to structural work.

SCHEDULE STATUS:

Schedule Items	Scheduled Date	Actual Date
Contract Completion Date	June 30, 2012	
Traffic Analysis Report	December 5, 2011	December 7, 2011
Revised Design Report	December 12, 2011	December 19, 2011
Etc.		

Explanation of Variance Between Anticipated and Actual Schedule:

Submittal of revised Design Report was delayed pending revisions to the Traffic Analysis Report and resolution of channelization comments from the County traffic engineer and signal reviewer.

BUDGET STATUS:

Maximum Amount:	$18,364.24
Due This Invoice:	$13,459.29
Previous Billings To-Date:	$ 0
Remaining Authorization:	$ 4,904.95

PERCENT OF BUDGET EXPENDED: 73.3%

% OF PROJECT COMPLETE: 70%

Explanation of Comparison of Budget vs. Estimated Completion:

Percent of project completion is slightly behind percent of budget expended. Unforeseen delays in the approval of the channelization plan have delayed final design of the signal and drainage elements of the 60% design. Etc.